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EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S.
MONTREAL, QUE.

ASSOCIATE EDITORS:

G. S. MARTIN, D.D.S., L.D.S.
TORONTO JUNCTION.

A. H. BEERS, M.D., C.M., D.D.S., L.D.S.
MONTREAL, QUE.

R. E. SPARKS, M.D., D.D.S., L.D.S.
KINGSTON, ONT.

CARL E. KLOTZ, L.D.S.
ST. CATHARINES, ONT.

EDITOR ORAL SURGERY DEPT.:
G. LENOX CURTIS, M.D.
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Dominion
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Original Communications.

NICOTIANA.*

By A. C. Cogswell, L.D.S., D.D.S., Halifax, N.S.

Gentlemen,—It requires sometimes more than the courage of one's convictions to express an honest opinion, much less caution in attacking a favorite of the people. A prudent man, one who wishes to sail quietly down the popular stream, would be disposed rather to flatter and applaud the object of their affections. But an honest man, who may differ a little from others, as a prudent one, can never flatter where he feels a friendship.

Facts are said to be stubborn things, but from these we form conclusions which, carefully analyzed, enable the unbiased and unprejudiced to return an honest and conscientious verdict.

History records that the name of Nicotine, or Tobacco, was said to be from one Jean Nicotte, who first introduced it into France, hence Nicoteana; or, as said by others, by Jacobius Nicotius, Ambassador to the Court of Portugal from Francis II., King of France, he having purchased some of the seeds of this plant from a Dutchman in 1560, who had brought them from America, and from this seed it was brought to France; Sir Francis Drake carried it to England, and Sir Walter Raleigh first brought it into fashion; the dried plant and leaf was afterward imported from Tobago, and hence its present name tobacco.

The common tobacco, so called Verginia (N. Tabacum), is a native of the warm parts of America, the cultivation of which had extended, before the discovery of the New World by Columbus, far to the north of the plant in which it is indigenous. We are also informed that when Columbus visited the West Indies he found the natives smoking this plant, made into cylindrical rolls wrapped in maize leaf.

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*Read before the Dental Association at Wolfville, N.S., Aug. 25, 1897.

It also seems from records of old that the American Indians have been using the plant from unknown antiquity, and with them it ever has a religious character in connection with their worship and all important transactions; thus the calumet, or pipe-of-peace, is indispensable to the ratification of a treaty, and smoking together has even greater significance of friendship than eating together has among other nations, believing that the Great Spirit smelled a sweet savor as the smoke of the sacred plant ascended to heaven.

There seems to be no record of the use of tobacco in Shakespeare's time, while it is supposed to have been used only by the wealthy, as the price was very high, and smoked in small pipes.

The use and application of tobacco from its first discovery has been various. As a medicine it has been recommended, and it has been used where digitalis has been unsuccessful. Dr. Flowers, an English physician, in some cases of dropsy recorded its use with beneficial results.

The great Linnæus, in classifying this plant, places this genus as one of those having five stamens and one style, having eleven species, one of which is hyoscyemus, from its similarity to the deadly henbane. He also places tobacco in the class of lueidae, which signifies pale, ghastly, livid, dismal, fatal, classing it also with other poisonous plants, bearing the name of Atropa, one of the furies. The oil of this plant is one of the strongest vegetable poisons, inasmuch that no animal has been known to resist its mortal effects.

Tobacco, when first taken into the stomach, creates nausea and external disgust; if swallowed, it excites violent convolutions in the stomach and bowels, in the effort to eject the poison upward or downwards, and, if not speedily and entirely ejected, it produces vertigo, faintness, and prostration of all the senses, and in many instances death has followed. For the destruction of insect life on plants, flowers, especially roses, it is used as a decoction by florists, botanists and others successfully during the blooming seasons.

The excessive use of tobacco is not confined to America alone. So general had become its consumption in the seventeenth century that much was done to prevent its use and suppress the increasing and prevailing habit. In Turkey, Pope Urban VIII. and Innocent XI., as well as priests and sultans made strenuous efforts to suppress it by declaring it a crime to smoke or chew the plant, and we have it recorded that Sultan Amucet IV. decreed punishment of the most cruel kind of death, by having the pipes of smokers thrust through their noses, and in Russia the noses of smokers were actually cut off in the seventeenth century; nor did this opposition to its use confine itself to Turkey and Russia alone. We are further informed that King James I. of England was so averse to its use that he issued a "Counterblast to Tobacco," in which he describes its use as a custom "loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black, stinking fume thereof nearest resembling the horrible Stygian smoke of the pit that is bottomless." Among the Chinese, so general has become the use of tobacco that even girls eight or nine years of age are known to wear an appendage or pockets to their dress, lined with silk, for the express purpose of holding a pipe and tobacco for frequent use.

Another form of using tobacco, prevalent in the seventeenth century and early part of the eighteenth, was in the shape of snuff, and as late as the middle of this century, to my own knowledge, snuff was sold by many of the grocers as well as in all the stores to men and women of all classes. Again, in the Southern States of America the fashion of dip, so called, at one time was quite prevalent; this was common among the women and girls, and was practised by using a porous piece of wood or straw, placing one end in the snuff, the other in the mouth, and drawing up the snuff into the mouth, which was allowed to remain a short time, and then the mixture was thrown out by expectoration.

Fashion and habit, no doubt, are responsible for the introduction and use of this weed.

Habit, 'tis said, blunts impressions, while constant use and familiarity to many things increases the desire. Is it not the fact, that the first effect on the boy or man who uses tobacco is far from pleasant, and by the nature of the weed invariably produces a nauseating effect? It is most assuredly repugnant to nature, and to all natural desires, and therefore seems most strange that this poisonous weed should be used in any form. Still we find by constant use the natural, as well as mental impressions, become so familiar to it, that what was first so exceedingly repulsive, slowly and gradually becomes a fixed habit. One would most naturally suppose its first use would tend to breed only contempt for so unnatural a use, as it invariably leaves the most unpleasant recollections in the mind of the beginner. It is thought by some that with habitual smokers the tongue is rendered dry and partly insensible by smoking, and the sense of taste either vitiated or partly destroyed, if not wholly, and from the dryness of the tongue induced by smoking, it is considered by many writers to induce thirst, which leads also to the habit of drinking.

Prof. Thornton, of the Royal College of London, in one of his lectures to his students, remarked, "that in using tobacco in any way, to smoke or chew, nature is being perverted," and when so perverted excites a desire, which appetite or desire often becomes inordinate and ungovernable. "Reaction, or physical resistance will," says the Professor, "like that of the moral, lessen in proportion to the repetition of the attacks, and then those guards of health desert nature and go over to the side of her enemy, and thus we see how intemperate drinking and immoderate smoking tobacco or opium first began their destructive career."

The first effect of tobacco on those who have surmounted the natural abhorrence of it, and who have not only learnt to endure it, but even acquired the habit of chewing or smoking, produces a waste or vitiation of the saliva. This saliva is secreted by a complex glandular apparatus from the most refined arterial blood, and constantly distils into the mouth in health, and from the mouth into the stomach, at the rate of twelve ounces a day. It resembles much the gastric juice of the stomach, and its importance in digestion may be imagined after listening to the words of the great Dr. Boerharre, who, in one of his lectures at the Academy, remarked, "Whenever the saliva is lavishly spit away, we remove one of the strongest causes of hunger and digestion; the chyle prepared without this fluid is depraved, and the blood is vitiated for want of it." "I once tried," said the great philosopher and physician, "an experiment on myself, by spitting out all the saliva. The consequence was I lost my appetite; hence we see the pernicious effect of chewing and smoking;" and the conclusion by the philosopher was, that chewing and smoking tobacco was pernicious to many, especially those who are thin and pale and of a consumptive tendency, by destroying the appetite and weakening digestion. At one time it was thought when the plant was first introduced into England that it was an antidote to hunger, but it was observed that the number of hypochondriacal and consumptive people was greatly increased by its use, and, among the testimony of others, we find also that of Prof. Cullens, in his "Materia Medica," stating, "that constant chewing tobacco destroyed the appetite, by depriving the constitution of too much saliva." This may be also the case from smoking if expectoration be indulged in too freely.

It is said that one of the kings of Spain was afflicted with an offensive breath, to remedy which the physician advised His Majesty to chew a composition of gum-arabic, ambergris and other perfumes, the use of which occasioned a great expenditure of saliva. The courtiers from the vanity of imitating their superiors, went very generally into the same customs. The consequence was, that those who also followed the fashion with ardor, lost their appetites and became emaciated, and consumption increased so fast among them that the practice was forbidden by royal edict.

Those who do not eject the saliva from tobacco, but swallow the mixture, usually find it induces faintness, palpitation of the heart, trembling of the limbs, and, sooner or later, some chronic trouble.

The habit of tobacco users expectorating is becoming so prevalent, that to pass along some of the side-walks of our cities, one is ashamed to find so many blotches of black saliva, pools, oftentimes at the corners of streets, where boys and men congregate, so much so that ladies can scarcely pass without their garments being soiled from such accumulations, and while passing some of the hotels we find those occupying the verandas using the sidewalk for cuspadores; and as for smoking rooms in hotels, one requires to study navigation so as to find their way around the numerous array of spittoons, so placed on guard as to act as receptacles for the choice remains of cigars and extract of tobacco.

"CHARGE OF THE LIGHT BRIGADE.

(Parody.)

"Cuspadores on the right,
Cuspadores on the left,
Cuspadores all round and more,
Charge, gentlemen,
Charge, and aim for,
The cuspadore."

The habit of using tobacco is no doubt largely increasing annually, not only in the United States, but also in the Dominion of Canada, and most markedly in all the large cities, towns and villages. The amount of inland revenue derived last year, and by our Government, from tobacco, was not less than $2,557,000, and on cigars $690,000, making a total of $3,247,000, for a population of five million inhabitants, by possibly not less than one million males who were consumers. Add to the revenue the cost of the article, and the sum would seem almost incredible—such a waste of money, time and health to be thrown away as useless, with not the slightest benefit in any way to the human race. From observations made while sitting in front of a large hotel, in July, in one of our principal cities of the Dominion, I feel convinced that I am underestimating when I say that at least one-fourth of the male population of the said city use tobacco in some form, for from one hundred passing within one hour between eight and nine o'clock, one-fourth were smoking pipes or cigars, and many others who were not indulging at the time, were known to be in the habit of using tobacco daily in some form.

We may ask—How many are the ills of life caused, no doubt directly and indirectly, by the use of tobacco? Some of these may be named, such as heart-failure, narcotic paralysis, cancer, consumption, amarosis, preceded often by muscular indolence, loss of appetite, and a depraved condition of the body and mind. Prof. Thornton has written and lectured to his students as follows: "I am entirely convinced that smoking and chewing tobacco injures ultimately the hearing, smell, taste and teeth;" while we all know, as remarked Hippocrates, that good teeth conduce to long life, because he who does not masticate his food perfectly and mix it thoroughly with a due proportion of saliva will find his digestion fail, and this failure will gradually open the avenues of death.

The premature loss of teeth to those who use tobacco in any form, and more especially to excess, by many can be proved beyond a shadow of doubt. To those of the profession who are called to operate on the mouths and teeth of such persons, it is needless to say it is often found that the odor from such mouths are steeped with the last fumes of the pipe, the teeth blacker than the ace of spades, especially on the lingual surface, covered with nicotine and germs, spongy, and receding from the necks of the teeth, usually attacking first the upper molars, causing exposure of the palatial roots, loosening of the same, and attended frequently with general elongation, pylorus and premature loss. Add to this frequent unpleasantness, and odor from the gums and teeth arising from this condition of things, worse than the last, and nothing can be more disgusting and disagreeable to work over than a mouth of that description. I have sometimes thought that the black hole in Calcutta would be paradise compared to the mouths of some old smokers, for if the fumes of such mouths alone were inhaled by the parties themselves for any length of time, the only wonder would be how they could exist by breathing such impure exhalations charged with the germs of death. I have met also with men who, from the excessive use of the pipe, had the roof of their mouths covered with small blisters, arising from the fumes of tobacco, that the mucus membrane presented the appearance as if parboiled, from the hot tobacco smoke.

Again, smokers often present artificial dental sets, the plates of which are completely covered with nicotine, and blacker than Egyptian darkness, containing sufficient poison to destroy animal life.

And so prevalent has become the use of tobacco, that to satisfy the demands of many, three of the back seats in all the open trams are reserved for smokers; smoking cars on railway trains, and smoking concerts where the fumes of cigars and pipes fill the room for hours, for the benefit of lovers of the plant.

Go where we will, on the street, on the steamers, at open air concerts, in public, in private, it seems that tobacco has become one of the most fashionable things of the day, and while so many men have become addicted to its use, possibly many seemingly without any apparent injury to themselves, yet with others we know it to be otherwise, and so prevalent is it becoming among the boys, and young men of this age, that its injurious effects are now recognized by many of the leading men, and professors of colleges in the

United States and in the Dominion of Canada. Quite recently the Board of Managers of some of the Boston and Ohio universities have made stringent rules, forbidding its students to use tobacco in any form, owing to its injurious effects on the mind and body. Laws have also been made forbidding the sale of cigars and cigarettes to minors or boys under ten years of age, to prevent, if possible, its increasing use and injurious effects on the young and rising generations.

I have thus glanced only on some of the facts in connection with tobacco, and have said nothing as to the expense individually, both to the smoker and chewer, which possibly may be of interest to those who have not estimated its cost.

The amount of tobacco in the shape of cigars consumed by one man for one year seems almost incredible, especially if he be classed among the so-called *good* smokers. Among some of the great smokers of cigars may be named the late General Ulysses S. Grant, who, it was said, died from cancer produced by excessive smoking. Mark Twain, or Chas. H. Clements, gave his testimony which was published in the *Christian Union* several years ago, a paper then published and edited by H. W. Beecher, and now edited and issued by Lyman Abbott, of New York, and known as the *Outlook* in journal form. The statement made by Mr. Clements was that for years he usually smoked on an average ten cigars a day, and some days had done better. General Blank, who was stationed at Halifax some years ago, was seldom without a cigar, while his aide-de-camp was obliged to give up smoking after using it for years, owing to its producing heart failure. A captain of one of our well-known steamers assured me that he frequently smoked twelve cigars in the twenty-four hours for weeks at a time. Many others could be named whose consumption of tobacco seems almost beyond a possibility. Now if we estimate the cost of such a habit, from which so little good results, it seems a great waste of money, which could be used for so many better purposes. Let us, for instance, estimate the cost for cigars alone for one or ten years. Take, for example, Mr. Clement's consumption : at ten a day would give 3,650 a year, add 100 more for friends, gives 3,750, and for ten years not less than 37,500 cigars, which at 10 cts. each would give the large sum of $3,750.00 for indulgence in smoking alone. Also the late General Grant's bill for cigars, who for some years, it was said, had them manufactured for him expressly at a cost of 25 cts. apiece. One other case in the Province of Nova Scotia: A Mr. Bond, residing in one of the large towns in this Province some years ago, consumed from twenty years of age up to eighty, at the time of his death, 5½ lbs. of fig-twist tobacco a month, the cost of which at that time was 50 cts. a lb., making in sixty years, at 66 lbs. a year, 3,960 lbs., costing $1,980.00 for chewing and smoking during his life-time, equal to the cost of 400 barrels flour at $5.00 a barrel.

These I have referred to, no doubt, are a few of the exceptional cases where tobacco is used, or has been, to great excess, and, as some of the parties lived to a good old age, the argument may be advanced that tobacco could *not have been an injury*. Possibly not, as I have said before, in some cases, where the constitutions of the parties are strong and rugged, accustomed to outdoor exercise and exposed to changes, tending to make the body vigorous and healthy; yet, on the other hand, many who are not so happily constituted, and whose mode of living is not conducive to health or long life, and who can ill afford to indulge in any luxury or excess at the cost of health or mental activity, are suffering daily from its use and abuse; and how often we read of deaths in the daily papers from tobacco. Only a few days since two were recorded, of which are following: one a youth of only seven years, the other a clever electrical expert, age thirty-six years; both died from the effect of cigarette smoking.

In conclusion, allow me to thank you for your indulgence in listening to this imperfect paper, but should anything emanating from it enable any of you to come to the same conclusion I have long since arrived at, namely, that the use of tobacco is not conducive to mind or body, and an expensive luxury, for which small returns, if any, are given for so great a sacrifice, I shall be glad to know that some one has benefited from what has been so imperfectly given to the members of the Dental Association.

HINTS.

By a Lazy Man.

1. You can buy prepared square cakes of pumice stone which are very convenient for cleansing the hands, polishing dirt off tables, and softening the stiff bristles on your chin before shaving. Only be sure and get it all off your chin before using soap and your razor.

2. After removing the bolts of your flasks, dip the screw in a bottle of oil convenient for the purpose, and they will always be easy for use again.

3. A first-rate laboratory bench-block may be improvised by securing on the table, one of the rubber-tipped door stops sold for the purpose of keeping doors from damaging the wall. They can be screwed into the table anywhere and in any position.

4. If your hands are dirty you will dirty rubber in packing sets, and the dirt remains. and even seems to penetrate deeper than the

surface you wish to polish. The pumice block is a good thing to clean solid rubber before you pack.

5. A common soup ladle with holes made in the bottom to let the water out, is useful to lift hot flasks out of hot water.

6. A small hoe, used to scale fish, is useful for scraping hard plaster from the bench.

7. Articulators and head-rests are two articles which the capacious brains of our mechanics should improve.

8. I never need rubber scrapers—hardly ever. If you prepare your pattern plate properly, and are not too mean to buy well-made pattern wax, your plate should come out ready for the sand-paper.

9. Do not use oil or shellac varnish to keep the second part of the plaster from sticking to the first in filling flasks. Keep a pot of the soap suds; after soaping the plaster, run water over it. It will not stick.

10. You can buy at any hardware store a neat, round and cheap asbestos plate on which to put rubber when you are packing. Clean and convenient.

11. You can buy in rubber stores, rubber fingers, which are useful if you have to finger foul mouths, and are just the thing to have on the finger of the hand which you use in the mouth when keeping the lips and tongue out of the way in extractions.

12 If you use beeswax or compound, have it ready rolled in thin sheets to save time.

13. Sulphate of potash always kept uncovered loses its value for hardening plaster.

14. If you insist upon placing a porcelain crown, either with or without a collar, upon a very hollow root with an opening larger at the neck than towards the apex, do not use amalgam as a retaining cement around the metal pivot. Thoroughly dry the root cavity; wipe it out finally with the merest suggestion of oil of cazeput, then pack it tightly with warmed gutta percha—not the pink used for pattern plates—heat the metal pivot; work it into the gutta percha, packing as well as you can. I prefer it to anything else.

15. After operating for patient afflicted with pulmonary tuberculosis, sterilize your instruments, hands, etc., as carefully as if you had been operating for a patient suffering from syphilis.

16. Some of the trouble which occurs in the vulcanizing of dental caoutchouc, is occasioned by a hap-hazard way of raising and

retaining the temperature. If the directions advise you to keep the temperature at 315 degrees Fahr. for one hour and a quarter, it is a mistake to keep it at 320 degrees for an hour. In the matter of proper vulcanizing, the slow and sure method in heating and cooling is the best.

17. If you buy a new drug, do not use it until you know all that is worth knowing about its action and uses, and if a poison, its dangers and its antidotes.

18. A properly adjusted Auer light is away ahead of any electric light, if you are obliged to use artificial light at the operating chair. It is nearer the natural light of day than any other.

19. Keep your dental engine, chair and spittoon covered from dust at night. Do not use too much oil. Dirt is the bane of the dentist.

20. If you have rough hands from handling flanks, etc., wash well with hot water and soap when going to bed, rub vaseline on them thoroughly, and pull on a pair of large-sized gloves.

Too lazy to say more just now.

"EXPERIENCE."

By L. D. S.

He is a wise young man who is eager to profit by the experience of his seniors. Experience is a thing which cannot be found in books, or even obtained altogether from the experience of our seniors. One must get the most of it for himself. It is not an article that he can wholly transmit to others. It is a part and parcel of his own individual existence, as much as his own breathing and sleeping and eating. In trade and commerce, politics and the professions, it is a commodity of commercial value, which is reverenced and respected by wise and thoughtful men.

In the December issue editorial comment was made upon the want of sound judgment by many whose practical skill may be superior. It opened to my mind, as an old practitioner, a whole flood of recollections past and present, in my own career and that of others, and brought back vividly to me many a disappointing moment. Any one who ever witnessed the eminent and aged Dr. W. H. Atkinson, with his double pair of spectacles, performing the most exquisite operations, or who is familiar with the skilful work and sound judgment of the older school of operators in Europe and America, must appreciate the vigor of mind and body which makes such work possible. One does not find men of experience risking the wreck of reputation upon the wholesale insertion of crowns and bridges, and indulgence in the fantastic fads—or frauds—of many of the junior practitioners. Perhaps I should not call them "frauds"; generally they do not know any better, and knowledge is the result of experience. A man of experienced practice can readily acquire any new practical idea which presents itself. But his experience helps him whether to accept or reject. And the judgment necessary in the latter is quite as valuable as in the former. We English people would be all the better for a little more of the Chinese reverence and respect for age and experience.

HEREDITARY CLEFT PALATE.

By W. G. B.

Some years ago when I was much interested in the mechanical restoration of cleft-palates, by means of an improvement upon the Kingsley method suggested to me by Dr. E. B. Bogue, of New York, the number of cases which came to me for consultation was far more numerous than I had either the time or the inclination to tackle. The cost of a scientifically constructed apparatus ($400.00), was, of course, a bar to its general use, and the many cheap devices offered deterred me from wasting further time in the matter. One early case, which I took to New York, and had constructed under Dr. Bogue's personal supervision, was in every sense a success, but the patient was obliged to have the velum removed, and an accident having happened to the type-metal moulds in his possession, it was impossible properly to renew that important part of structure; notwithstanding, the patient continues to use the old velum, curled up out of shape.

In studying the history of the many cases I met at the time, I had never been able to verify any proof of the hereditary character of cleft-palate, in spite of the fact that such cases were on record. Mr. Ramsay, in a paper read by him at the Odontological Society of Great Britain, in 1865, repudiated the hereditary character, and, if I am not mistaken, this opinion was held by Sir William Fergusson. Mr. Francis Mason, of St. Thomas' Hospital, however, cites several cases which came under his own observation. I have been much interested in the recent discovery of a well-known family in Montreal, in which there were three cases—two sisters and a brother, and a case of a French-Canadian cabman, who had himself a complete fissure of the hard and soft palates, and whose eldest boy had a cleft of the hard palate complicated with hare-lip.

Proceedings of Dental Societies.

ONTARIO DENTAL SOCIETY, TORONTO.—DR. MELOTTE'S CLINIC, JULY, 1897.

As I said before, this model represents a case, quite a common case, where bridges are attempted. The posterior anchorage is the second molar, and this case presents one of the difficulties hard to overcome. I had this model carved from a half section of the lower jaw. The carver has done his work well, and I believe it to be a beautiful specimen of work. You see that the occluding force of the upper teeth has worked upon the molar and tilted it forward, giving a dove-tailed space. I suggested at a meeting in Pittsburg, a year ago last January, that Dr. Angle could devise an apparatus to tilt a tooth back into its place, giving it somewhat that position, and after wearing an apparatus for a few days the difficulty would be overcome, certainly to a great extent. But, without such an apparatus, it is necessary to trim that tooth, and trim it even more that what I have done, as you see on this zinc tooth. An impression of this tooth was taken, zinc was poured in, and the tooth filed and trimmed, until we have gotten rid of considerable of the difficulty of the dove-tail space. I rather think that a bridge constructed on that would fit. I calculate, as far as I can, to construct a bridge for this large model.

Now, if there was an occluding tooth here about like that (indicating), the first thing I should do would be to take a wheel and grind off sufficient of the anterior cusps to admit of the crown of gold that I should want to have cover that portion of tooth to give strength and sufficient occluding surface to prevent the wearing. After doing that, my manner of making the crown would be to take and form a band of gold—I need not go into the detail of telling you how thick—but I should fit the band to the contour of the gum perfectly. Let it extend above the crown about as you see this. I will try it. There is nearly half an inch in this case, and proportionately the same in forming the crown.

Now, Doctor, if you will mix some plaster of paris as quickly as possible, I will show what I should do in the mouth.

I should fill in here with plaster, tamp it down, and by taking the thumb and pressing over the band producing a little pressure, which would drive the plaster about the tooth, and exclude the air.

Now, I will fill this just exactly as I would in the mouth. Suppose we have tamped it down well, and excluded all the air. Now, we will let that rest, and I will talk about it, and perhaps stop and allow you to ask questions when I get to a point where I can do so. You see that I have taken an impression of the cusps within the band. I shall remove the band from around the tooth, and, turning it bottom side up, will look down into it, and find that I have a perfect impression of the cusps.

Now, Doctor, please melt some metal as quickly as possible. I do not suppose, gentlemen, that it is unbecoming modesty in me to speak a little about this metal. Its use has increased wonderfully. [This attempting to give a clinic and a lecture at the same time is quite a difficult matter ; but still I think I can make you understand.]

This metal was brought out in about 1887, I believe. My first exhibit of mouldine, and the metal, was at Niagara Falls. Dr. Weagant was there. They saw me make a die in just one minute. I had some ice-water. Of course, that was hurrying up, but I believe I did it in a minute. Now, this metal is called Melotte's metal the world over. I am not to blame for them calling it Melotte's metal. The fact is, it is not Melotte's metal, but if you want to call it Melotte's metal, I do not know that I can prevent you from doing so. I do not want to steal the thunder of any man who died long ago. This metal has been used a great many years, and I believe it was called Sir Isaac Newton's metal. Prof. Flagg, of Philadelphia, says, " How is it that you have taken that formula and called it yours ? " I never did it. I laughed at him. I said, " You and the profession have done that." At Niagara Falls, I said to them the formula I used is so and so. Mouldine was very soon put on the market. I discovered mouldine, possibly. I was told once that a dentist, not a hundred miles from Ithaca, had discovered it twenty-five years before. I am sorry he did not let the profession know it. Well, I did let them know when I discovered mouldine, and what my discovery was with regard to the use of it. I shall not go around the world making excuses for calling that Melotte's metal. I do not care particularly. Most anything of the kind would tickle a man's vanity. Well, it has been given to me, I think, to discover a great many uses for fusible metal, and I have thought a great many times that I had reached the end of the uses ; but they keep coming.

I will digress and tell you about making a bite. Here is a case where I made a set of gum teeth, and removed it from the articulator, and I have it with me. I took an imprint of the lower plate. The posterior teeth were in. I took it, and poured fusible metal into the plaster impression, and within two minutes I cut it out, cut off the plaster, and got that (indicating). I make all my articulating models in that way, where the teeth are many, and I can do it more quickly than you can do it with modelling compound, or take an impression. If I take it in plaster I have got something that is perfectly accurate. I endeavor to make the methods that I have discovered useful to me. Many times in working them you have to run the scale as perfectly as you would the scale in music. If you miss a note you will find your work is imperfect at the end. If you drop a stitch in knitting a stocking, and you do not pick it up, your stocking will ravel. The great trouble with dentists is they are constantly dropping stitches, and they do not seem to mind it. There, gentlemen, is where the failure comes in, in bridge-work, and failures are constantly coming all the time. We are not true to our instincts. The first thing you have to do in making a piece of work is to please yourself, and if you fail in making the lines of beauty, even in carving up a plaster model, you have lowered yourself a little. You must be the first judge; the God in you, the Divine in you, is the severest judge that you will ever have. If you evade that judgment, at the end of five or ten years you will see your mistake. Gentlemen, I tell you, you want to be careful and not drop any stitches.

Now, this is the first time I have ever attempted to do anything so large as this; but I expect to be called upon at some time to make a full set of teeth for the mouth of the Mississippi.

I am a foreigner, gentlemen; I have come from the United States, and I was shocked to-day; I didn't know whether I was in a dream, or waking up out of a nightmare; I could not just understand it, but I suppose it was a newspaper boy, and to him I heard a woman say: "I want the World, if you have got it." Well, now, that was not Queen Victoria. If it had been, I should have expected she would have been applying pretty soon for the United States to be annexed to Canada.

Gentlemen, I had the privilege, in 1890, of visiting the British Dental Association, at Exeter, England, and saw a great difference in the decorum there, and the civility in the discussions. I do not want to flatter you, but somehow or another I like your style here. I was fortunately, or unfortunately, born in the United States. My father was a Canadian—lived in Montreal. Cornell University wanted a President, and it had to come over to Canada to get one, and a worthy President he is. Many Canadians have gone over there. I think that the respectful quality is a little more prominent among the Canadian boys than American boys. We have an excess of freedom; we have the "Get there, Eli" boy, and it is a grand thing; we are making wonderful progress, now that we are all on wheels.

Again I have digressed; but here we are. Doctor, just dig that out, please! (I requested that Dr. Templeton might be called here as my assistant.)

Now, gentlemen, I have come to the very pretty point that shows the cusps exactly; and now I am in my operating room, not in the laboratory. I will trim that out about the summit (if that is the proper thing to say about the cusp). Next, I should take and put a little wax in here, just enough to contour that slightly, but not to deface it. Now, I will take a burnisher and burnish this down. I have done this a hundred times, perhaps.

Here is a copy that I have made of the spoon. Some person, in one of the journals, suggested that taking Melotte's cup, and making a hole in the bottom of it, would make it better, and I believe he is right. Now I have an impression on that crown.

Well, gentlemen, I might as well tell you right here about this. This is my posing pad. I have a soldering pad and a posing pad.

We will just take this piece of asbestos paper and put around here, because we have nothing else. This will show you what to do when you have not what you want. Use a piece of asbestos or a thick piece of rubber-dam.

Now, you see I have got that. It is not quite hard, so we will wait a minute.

Now, supposing I wanted to make a saddle there. You need not think I would take mouldine and do that in the mouth, but I am doing it here with mouldine because I have not plaster. There is a very good reason why I should put a segment of plaster in there, and pretty soon I will tell you why ; but, supposing I had taken that from a model out of the mouth, and I wanted to make a die and counter-die. Now, you see, you stick this in here ; be careful not to crowd the mouldine too much, and then you pour the fusible metal in. A piece of thick rubber is better, as thick as they use for the bellows rubber. You can take these pins. This posing pad is made of layers of blotting paper. That is all it is ; but that is one of the things I could not do without very well in my laboratory.

Now, I have got to the point of separating this, and I find that I have a perfect die of the crown surface of the molar.

Now, instead of making a counter-die, as I taught the profession to do, and as some get along without doing, by taking lead, and wishing to be a little different from anybody else, I take these little blocks of wood, preferably cherry, and with one blow I stamp the gold and swedge it, and so I get rid of making a counter-die.

In this case, if I should go on and complete it, and make this crown, as I could do, why I should probably have to make a counter-die for it, but you see that if I swedge this and put it on there, it will fit exactly. I will now put it on and mark it, and then the next thing is to get the fusible metal out. You put that preferably into a little ladle with some water, and boil the water, and, of course, the metal melts at boiling temperature, and melts it out. Then, be very careful to remove every trace of fusible metal. If you do not, it will, under heat, unite with the gold as quickly as lead would, and spoil your crown. Many crowns have been spoiled in that way. I have met with all these accidents myself.

Now, gentlemen, when you take a piece of bridge-work off, don't do as an eminent dentist did in New York, where the teeth used as abutments had been destroyed by tartar following down the roots, and it was necessary to remove the bridge. He kept the bridge as an Indian would keep a scalp—to tell how many he had scalped. I think that is about the meanest trophy a man can have in his office. Accidents are liable to occur. You can see in a minute that the man who made that bridge was not to blame because the tartar came around the teeth and ran down—because pyorrhea set in. Alveolaris may be checked, in a measure, by bridging teeth. I wore a piece for fifteen years with the greatest comfort in the world. But at the end of that time I had to lose both bridges within two weeks. I have two teeth in a bottle here somewhere, showing how the tartar has gone around to the very roots, while the bridge has worn for fifteen years. I did not put in the bridge. I could not get into my own mouth to do it, but Dr. Kerr, of New York, the man who did it, did faithful work, and it gave me great satisfaction. He did it all in five hours. He is a quick worker, and if you had looked at the teeth and seen the band as it set off a little bit upon the free margin of the gum, you would have noticed that the margin was not interfered with, because that did not set right close ; I did not know anything about it ; perhaps it lasted longer because I didn't. I think I have occasionally failed in fitting bands as close as they ought to have been fitted.

If an artist had all the pictures he ever painted together, don't you think he would find some that ought to be thrown away, and others that were fit to hang on the wall ?

Now, the posterior abutment has been formed.

If there is any gentleman would like to ask a question, very well. I told you that if this wanted thickening up here, then I would do it. In this case I would suggest another piece, and sweat them together ; perhaps if you cut a piece off it would leave a little hole in the centre, and you might drop a little piece of solder in the centre and unite them. In forming these bands, I have not done so ; for how long is it, Dr. Templeton, since we have used any solder for soldering up bands ?

Dr. Templeton—About five years.

Dr. Melotte—Dr. Bing, of Paris, taught me how to do this. It was not new, but it was a newly applied principle in dentistry. You make a crown by means of the fire-gilding process. Dr. Clark, a retired dentist, of Saratoga Springs, formerly of New York, got a reputation there for making gold plates, held as a secret for years. His method of bending gold plates out at this line just above the gum, was to take a sheet of gold, put it in the rim of the hand, drop a few drops of mercury on it, forming an amalgam, and squeezing out the excess of amalgam, he applied it to all the spaces over the gums and around, even filling in the spaces between the teeth and making them smooth ; then squeezing out the mercury as best he could, and putting it into an oven when the fumes of mercury would escape ; after evaporating the mercury he had a gold welding.

A dentist came into my office (a sort of tramp). He told me how he got through college without paying. He stayed with me about ten days. I showed him all the courtesy I could. I made a band and applied the mouldine and let the patient bite into it. I have forgotten that man's name. I am glad I have forgotten it, but he has gone away to the other side. He will find plenty of heat down there to fix his teeth. Well, I found out that he was sending circulars all over the country, advertising his patent method of uniting gold without solder, and I had one of the circulars sent to me. I found one in Ohio when I was called there, and I told them that man stole his method from me, and it belonged to Dr. Clark as far as I could trace. So you see that is the way methods go.

Now, to make the other abutment here I should proceed in the same way, and have silver ferrule formed to go on there. You will imagine that both crowns have been formed, put in place, and now comes a very important thing to do. I want you to imagine that the two crowns are in place in the mouth, that I want to get the occlusion of the teeth, and get it perfect. I do not know but what I would make a man a present of something that did not cost me very much, if he could make a specimen, or model, and send me evidence of having acquired this method from what I say, and the demonstration that I make, because of all the methods that I have ever discovered, this is one I could not do without, of getting a perfect occlusion.

Now, I am mixing plaster. You see you want to take plaster and use it just in that way, like putty. You want to be perfectly cool about plaster. You can take the plaster and flap it around in that way, if you don't get nervous. It knows me. Now I am going to take it and put it right in there. This is the first time I have ever made a set of teeth for this patient. " Madam, I wish you would just close your mouth for a moment, and keep it closed." Now, she has closed her mouth right in here, we will suppose.

There, gentlemen, she has opened her mouth, and I have got the imprint of the teeth. I want you to understand that. And I want you to see the next step I take, because I might as well take it off, and possibly trim it here, otherwise you will think the thing is all wrong anyway.

I have trimmed that and put it back and it does not rock.

If there is anything in this world that is ugly, it is to put in a large piece of bridge-work and perhaps have the porcelain cracked, and when you get it ready to put on, crowd it on, and have some of them snap. I have been all through it.

The next thing to do is to get a flat bottom impression cup. After burnishing this, I take the cup, and make an impression from that. I take a flat bottom cup and take an impression in plaster over that segment ; remove it ; if the segment does not come out with it, I take it out. I put each cap in its place in the impression. The impression now is bottom side up. I am looking down into it. These anterior teeth are represented. I put a pin in the cuspid, and if there were other teeth here I should put in two or three pins, and cut them off about half way. I then melt some fusible metal. We will suppose that this is plaster. Now we are looking down into this plaster impression, and these anterior teeth here. There is an imprint of these teeth, the whole length of them. I put a pin in here, cut that pin off, form a dowl here, and take fusible metal and pour in there. Now, the balance of it is filled with plaster of paris and sand, making the investment model. Fill your gold caps, which would be represented like that looking down —fill them and you might put a tack or pin in there so that they would not break off in the plaster or investment model. Now you see when you take off the impression cap first, and when you begin to cut away the plaster, you come down to the fusible metal tooth, representing this tooth exactly. You cannot mark them or deface them, any more than you can deface this, and I do that for the same reason. Now, you have a model representing this segment in place just exactly as there was in the mouth representing this tooth in fusible metal. You take one side of the mouth, the articulating side, made an impression in plaster of just the ends of the teeth, pour in fusible metal, and you have got your fusible metal occluding model for the upper, and you have this for the lower ; put the two together, because this imprint will tell you exactly where these teeth belong, and you cannot miss it. There is no rule. If you have taken the steps rightly, it represents the teeth exactly.

Q.—Is that pure plaster ?

Dr. Melotte—Marble dust and plaster. I said plaster and sand

Here comes in the posing pad. I do not like this. I would rather have a piece of rubber, but the rubber was worn out. I thought I would make this do. It does not serve the purpose as well as I expected, but still I should make the use of anything.

I do not know, gentlemen, but you would a great deal rather have had me explain all this by paper, but, you know, I do not like papers. Wesley stood one time in the church, and looked very troubled; one of the sisters said to him, "Why, Brother Wesley, what is the matter?" Said he, "I have left my sermon at home." Says she, "Cannot you trust the Lord for once?" He said, "I will try it," and he preached the best sermon he ever preached.

Gentlemen, I would rather give it to you as it comes welling up crudely, because, you see, I am giving a clinic at the same time.

We will open this. It is the first time I have ever made a cast of that model, but we can make a very nice bridge, and I think it will be a permanent bridge, too.

Well, if there are any questions to be asked about this I wish you would not be bashful: it will only show me you are interested in it, and that you think it is of some particular use.

This method of taking the bite, and this manner of forming the cown are fundamental principles that govern me in bridge work.

Q.—How do you get that plaster segment out, if the teeth are leaning?

Dr. Melotte—That is a good point. That has bothered me, and I have had to take a number before now. That is a prttey good thing to do, if you don't get it out. I am going to make this just as bad as I can. Now wouldn't it be well to dry that, and put on a little alcohol, make it perfectly dry, and take some wax, and crowd right down in there, and make a core there, a Dutchman; fill in there and make it so that it would draw, and put in your plaster and it is all right anyway. That is the way to get over that difficulty.

Q.—Were you going to show us anything about swedging the cusps? You made a band?

Dr. Melotte—I swedged this. With one blow of this wood I made a counter-die and marked it; marked the cap and then marked this. Marked out this and then put the cap on there, and if you want the double thickness put it on. You will get a double thickness, probably, at the point where the occlusion comes.

Q.—Are there any individual cusps on your dummy?
curred in my office. My assistant, while working for a gentleman
Dr. Melotte—Well, here is a dummy. A funny thing oc-
who had been a school-teacher, a man somewhat advanced in age, turned to me and said, "What shall I do about this dummy?" The man looked at him and could not think what was up; but the dummy he was thinking of was not the dummy we are talking about.

If you want to know how to make a dummy I will have to tell you. Here is a tooth: that was carved from an English tooth. I shall take a piece of green gold about No. 30, and the green gold is formed by melting one-third—I shall not blame you if you put it down on your note-book—one-third pure silver, and two-thirds pure gold; add a little borax and melt it.

Now I shall tell you how to melt gold. If I get a bottle of nitrous-oxide gas I shall melt about two or three pennyweights of platinum, and if I have a pair of rollers here I shall roll it out for you. I shall endeavor to make some pure gold and platinum rolled together, welding the platinum and gold by simply rolling it, putting it through the gold rollers.

Now, this green gold is made as I told you, and the lining is put on here, and it extends over the edge of the porcelain, and with the burnisher burnish it down here like that. Let it come well down here, and then burnish around the pins. You will take the pins in a pair of individual forceps and flatten the pins; bend one this way and one that way to hold it in place, but burnish this soft gold. It is as soft as pure gold. It will not tarnish under the blow pipe. I got this idea of making green gold. I suppose it was equal parts of coin gold and pure gold, but I found it did not make the green gold. I could not get along without this, and I line all my teeth with it because you can retain the color of the teeth better than with pure gold, and it is quite a saving. It makes equal to about 18 karat gold.

Q.—At what temperature does that gold melt?

Dr. Melotte—I could not tell you, but I know it has to melt when I blow. It melts very easily with a mouth blow-pipe, or with any blow-pipe. To-morrow I will show you with the mouth how I melt gold.

Q.—What strength of solder?

Dr. Melotte—You can use 20 karat solder.

Q.—On the green gold?

Dr Melotte—Yes.

To form the remainder of this dummy you swedge out a shell of gold with a suitable die; you could put some wax on there and carve it very nicely. I should not take that trouble, but I should pick out one of the dies I have in my set, and swedge up a piece and blow it full of solder, and then take a file and bevel it down and place it on there, about as that is placed, letting it extend over a little, and invest it after heating fairly; always heating until it is perfectly brown. Then fill in solder as you were told to do by Knapp and some others.

Now, of course, you have your articulating model, and you have adjusted it. If you have made the articulation right you will find that this crown will be represented even to the 60th part of an inch. You can build up and get perfect occlusion if you follow this particularly.

If there is anything further I shall be pleased to answer your questions. If not, I will go on to the matter of constructing a gold plate.

Q.—What is your method of welding the top of the band?

Dr. Melotte—With solder about 18 karat.

Q.—You use porcelain faces. Which way do you bevel the top of them?

Dr. Melotte—Inwards. You must be careful and not let them solder; and, the worst thing in the world to crack porcelain is that sifting on of borax. It seems to me I do not use a 50th part as much borax as I have seen other men use. They appear to have a salt cellar and sift it on. I never use borax in that way. I rub onto one of these. You will find one of these wheels very nice for borax. All the working jewellers just get one of these carbon running wheels and make a creamy condition of borax right in this way. I think that will do very well. When I was packing up I put one of these in, and thought it would be a very good thing for grinding borax. A very coarse stone, such as a flat surface, tapering at the end, for sharpening scythes; I use one of these at home; it is rather narrow, but I like the coarse grain. A finer stone takes longer to grind, and a stone absorbs moisture; of course you can put on blotting paper, or make a little box and put the blotting paper in the bottom of it. This will keep the stone wet longer. I always use it the same as the working jeweller, a creamy borax, never using dry borax.

Q.—I understood you united the top of the band without solder?

Dr. Melotte—I told you I united this band without solder, but I can put a cap on that which will hold 20 karat gold, and with a blow-pipe I think I can weld it. I can put a square piece on there and make the edges creep right up and contour to the blowpipe and weld it. I might burn it through. I have done that; but that is dexterous use of the mouth blow-pipe. I am glad to find that the use of the mouth blow-pipe is established here, instead of the bellows. No student of mine can ever use a bellows and do crown work.

I see the compliment has been paid me, that in Canada here you have copied my blow-pipe and improved it a little. Here is one of mine, and here is the other; they look very much alike. Of course there was no patent obtained in Canada, and you had a perfect right to copy a blow-pipe, as perhaps some other things are worthy of copying that you find in the United States. A good deal is not worth copying anyway.

Q.—Would the driven crown serve the purpose as well as a made crown?

Dr. Melotte—I never put on one of these ready-made crowns in my life.

Q.—With two or more dummies how do you strengthen the bridge?

Dr. Melotte—Two dummies coming together, I fill in sufficient here to make it one continuous bridge; putting small pieces always in the place where we put the cup in this soldering pad; a small piece can be put in there; if not, it is better always in soldering the bridge, where we use a soldering pad, to put on the rim that is made to confine the heat, keeping it from rolling off; but, to secure the bridge on the pad, use iron pins. A gentleman came to me one time and got my receipt for making solder. I will not tell you his name, but he went home to a distant city and wrote me and said I cannot make the pins work. I use good brass pins. I wrote back to him and told him to use good honest New York pins, and not those old Pennsylvania pins that were made of iron; then I thought he would succeed in making his solder work. The next I heard from him he said the pins were all right. He had found some good honest pins. But, if you take those iron pins, instead of trying to make solder of them, and using them on the pad for pinning your work on, you will find they are very nice, because you can drop this bottom side up after you have pinned it on and it will be all right.

Gentlemen, I make bands by eye measurement. I commenced doing it when Dr. Templeton was with me, just for the fun of it, and I kept it up. Sometimes when a man is in your office and you feel you are in full possession of yourself, you want to surprise him, and this is one of the surprises I gave him. If you make a mistake, try it again. There is a great deal in crown-and-bridge work. Emerson says that what the soul says is true, and if you will only believe in yourselves, gentlemen, each one of you have more in yourselves to cultivate and believe in than anybody outside of yourself. Believe in yourself first, and it will give you the cheek to stand up for an hour and a half before a Canadian society and talk just as I have.

STUDENTS' ANNUAL AT HOME.

The students of the Royal College of Dental Surgeons held their second annual "At-Home" on Friday evening, December 10th, and the committee are to be congratulated on its success. The rooms were tastefully decorated with bunting in which was interwoven the colors of the college, garnet and blue. The evening's engagement was commenced by a concert in the large lecture room, which was highly appreciated by those who did not care to take part in the merry dance. The duet rendered by the Misses Ronan scored more successes for those young ladies. Then dancing took place in the large infirmary, from a corner of which Glionna's Orchestra supplied the sweetest of music. Light refreshments were served during the evening and at twelve o'clock supper was served in the large rooms at the top of the building. After this agreeable intermission dancing was resumed and kept up till the small hours of the morning.

The committee was as follows: G. A. Macoun, chairman; W. H. Bowles, J. S. Island, B. J. Currie, A. E. Hunt, G. A. Beattie, E. H. Henderson, K. C. Campbell and Dr. W. E. Wilmott, representatives from the faculty.

THE Dental College of the Province of Quebec gave a very pleasant "At Home" last month, at which the Dean, Dr. S. Globensky and Mrs. Globensky, Dr. R. L. Watson and Mrs. Watson, Dr. J. Gardner and Mrs. Gardner did the honors.

THE Ontario Dental Society meets in March to celebrate the 30th year of the establishment of the College. Dr. Black will likely be present to talk on amalgams. The Toronto Dental Society is arranging for a dinner for January 25th, at which there will be a feast of professional reason and a flow of social soul.

Translations

FROM THE FRENCH DENTAL JOURNALS.

By J. H. BOURDON, L.D.S., D.D.S., Montreal, Que.

ANCIENT PATHOLOGY: TEETH OF LOUIS XIV.—It is a well-known fact that the great king was born with two teeth; this anomaly was also observed with other illustrious personages, namely: Carius, Dentatus, Robert le Diable, Richard III. of England, Mazarin, Mirabeau, and of our days Dr. Broca. Known to that, Louis XIV. at the end of his life, wore an artificial denture made by his dentist (Dubois), who at that time was an expert in prosthetic dentistry. In a recent work published a few days ago by Dr. Cabanes, entitled "Le Cabinet Secret de l'Histoire," we find many details on Louis XIV.'s dental system. D'Aguin medical and historiographer of the health of Louis XIV., says that his royal patient had very bad teeth, that about the age of 38, in 1676, he commenced to suffer the most. During the campaign of Flander the king strongly felt obstinate pains. These pains were relieved by applications of essence of cloves, or of thyme, "antiseptic treatment," says Herve. Two years later, in September, 1678, the king, while hunting, caught cold; result, an abscess was formed, poultices of bread and milk were applied; the abscess was opened with a lancet, pus issued giving immediate relief. In 1685 he married Madame de Maintenon. The king was affected with necrosis of the maxillary, including perforation of the antrum. All the teeth of the left maxillary were extracted, by which a large cavity was left. The result was that everything the king would take would pass through his nose. This cavity was due to the extraction of the teeth taking away at the same time the bone; suppuration took place giving unpleasant odor. On advice of Dr. d'Aguin and Felix Tassy, first surgeon of the king, and Dentist Dubois attached to the service of his majesty, it was resolved to cauterize by fire. The royal patient consented to the treatment on January 10th; fourteen times the cautery was applied. Dentist Dubois, who held the instrument, fainted, seeming to suffer more than the king. The doctors prescribed the following gargle three times a day: spts. vini rect. 1 part, distilled water 8 parts, orange water 8 parts, so as to remove the eschar and bring granulation of the gum. Later on a complication set in by the fact of the closing of ouverture, pus coming out from the nose, due to the stagnation of liquids in the sinus. At this stage the malady kept for some time. It is allowable to say that this buccal affection and peculiar state of spirits of Louis XIV. led him to sign the fatal Revocation of the Edict of Nantes (1683). Besides, at that moment the royal household was far from being happy. One day the king said to Madame de Maintenon, "I am tired to bear your bad humor." "Sire," she replied promptly, "do I not bear your bad odor?" Eleven years later (1696) another abscess was formed, swelling of the cheek and maxillary glands. After many days and nights of pain the abscess broke, relieving his majesty. Unfortunately, the king, on the following Friday in going to church, caught cold, swelling tumefaction of the cheek reappeared, and lasted to the next Monday. The patient was relieved after having drawn three pans of blood.—G. VIAN, *L'Odontalgie.*

GOLD FILLINGS INSERTED WHILE CAVITY FILLED WITH SALIVA.—Mr. R. Heidé, Professor of the Ecole Dentaire of Paris, had the pleasure to submit, at a meeting of Odontological Society, February 2nd, 1897, teeth filled by Dr. Herbst with sub-marine gold. Sub-marine gold is a special gold 60 in thickness, therefore very thick, but nevertheless very soft and malleable; it is put in the form of pellets. With this kind of gold not only central cavities can be filled, but proximal cavities also, providing that the walls are very strong, not recommended for building loose part of tooth, such as corners, etc. Instruments used for the working of this gold are simple. First, a large polishing bur; second, same as first but unpolished; two pluggers for soft gold, this will constitute the whole. *Modus faciendi*—introduce large pellets of sub-marine gold with pluggers, then use bur No. 1, when in place fit in the gold, adding more gold till the cavity is filled. It is known for a long time the way of excluding humidity caused by saliva, by the use of the rubber-dam, but before these operators were subject to many inconveniences on account of the saliva, rendering work very tedious, and in many cases the work would not be finished properly. Sub-marine gold does away with these annoyances. Dr. Herbst recommends to dip the pellet of gold to be used in water so as to make its introduction more easy, rendering the filling more dense. " I will make a personal remark," says Dr. Heidé ; " this way of filling resemble very much to the plugging of soft gold with pointed pluggers ; but the finishing is done with burnishers applied on dental engine, then finished with corondum wheels. Dr. Herbst says that it is quite easy to add sub-marine gold to any fillings that are defective. The interesting point in this method, which is about the same as others in the way of filling with gold, is this : The peculiar quality of this gold, the limited number of instruments used for inserting a filling, is certainly a credit to Dr. Herbst, the eminent practitioner that every one has heard of.—M. R. HEIDE, *L'Odontalgie.*

GOOD ADVICE.—Very often a tooth, after being filled with gold or platinum, will be sensitive to hot or cold, even if a layer of cement has been put between filling and tooth, acting as a non-conductor. We know that this uneasiness will subdue in a short time. But the patient will sometime not understand this occurrence, and will every time that he presents himself to you, grumble, even to tell you that the work is not properly done, and wants you to do it over. To avoid all these inconveniences, I have managed to isolate in such a way the filling by covering it with a drop of collodion. By the evaporation of the ether the collodion forms a coating quite adherent, water-proof, will stand mastication for some time, and resist to saliva that would be acid. Its application is easily done by using a pointed piece of wood. The patient can apply himself once or twice a day and will have relief very shortly. I had a radical cure within eight to fifteen days, to the great satisfaction of the patient and operator. It's worth trying, for I had good success.—W. E. CHAPALAT, *Le Progrès Dentaire.*

FROM THE DENTIST OFFICE TO THE POLICE STATION.—A patient having a tooth extracted and then arrested by a police officer, is something of rare occurrence, such as happened to a brave habitant of Melbourne. He went to a dentist who injected a few drops of cocaine into the gums. The operation went on successfully, but hardly had he left the office of the practitioner when a nervous excitation seized upon the patient, and without any reason led him to the palace of the Governor, with the intention, as he shouted out, " To die in his arms." With great difficulty he was taken to the police headquarters and kept for a few hours until his mind was in a normal state, when he was dismissed after having given an explanation.

Correspondence.

DENTITION.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—In the November issue of the DOMINION DENTAL JOURNAL, page 389, is an article by "B.," entitled, "An Old Error About Dentition," which is so at variance with the leading writers and teachers on infantile pathology, that it should not be allowed to pass without a protest.

It has been quite *the* fad during the past few years, among a certain class of men—wholly within the dental ranks—to talk much of this "old error about dentition," and basing their assertions upon the high-sounding phrase that dentition being a physiological process, cannot, therefore, give rise to any morbid phenomenon, and likening it to *normal* menstruation and pregnancy; an equally fallacious argument, as it is not the *normal*, but the abnormal that is being considered.

Were it not that there is in this the semblance of credibility, and, therefore, misleading, it would not be worth while to notice it. But there is danger that men, without the time or the ability to investigate for themselves, will be led by this semblance of credibility to overlook or entirely disregard some of the greatest dangers threatening the infant life.

True, dentition is a purely physiological process, but, nevertheless, it is almost always accompanied with some degree of suffering, which not infrequently causes functional derangements and true pathological conditions. It is also true that with thousands of children, tooth after tooth appears without the slightest premonitory symptoms. The period of dentition comes and goes, attracting attention only when a new tooth is discovered. But as Tomes remarks: "Instances of teething such as these are comparatively rare, and can only occur in children who are and have been perfectly healthy, which involves a series of conditions our artificial state of living does not tend to bring about, even if it can allow."

Dr. J. Lewis Smith, in "Diseases of Infancy and Childhood," page 571, says: "An early recognition and appreciation of the fact, that difficult and painful evolution of the teeth frequently causes derangements in the functions of organs, even those remote from the mouth, and sometimes produces in them a real pathological state, will lead to a more intelligent treatment of grave and serious affections."

In support of the position of Tomes and Smith, we have the well-nigh unanimous testimony of the leading pathologists in infantile disease the world over, and while there are some who believe dentition cannot be productive of any pathological disturbances, they are, as Dr. Berry remarks, of right in the minority.

"When it shall have been proven that other physiological processes, like puberty and the cessation of the menstrual flow, are never productive of serious morbid states, then we shall give evidence to this new doctrine; but for the present it is emphatically the opinion of the vast majority of authorities, that teething is the only assignable cause of some of the diseases occurring during the dentinal epoch."

A few years since I went into a somewhat careful study of this whole subject, the results of which were published in one issue of the *Dental Cosmos*, for 1893, page 1301, and while it would be too much to ask you to reprint that paper in full, as it is pretty long, yet I should be glad if you would call it to the attention of the readers of your JOURNAL, that those who are interested may examine the authorities there given.

Yours, very truly,

Buffalo, N.Y. CHARLES S. BUTLER, D.D.S.

[It is a well-known fact, that editors are not responsible for the opinions of correspondents. In our November issue there appeared a stray bit of manuscript on "Teething," from one of our junior correspondents, which was published anonymously, because part of the article was lost in transmission, and our friend accepted responsibility of publication as it stood. We took the liberty of mailing Dr. Butler's letter to our correspondent, who has asked us to say, that his object was, not to deny that pathological results sometimes follow dentition, but to insist that the process which is purely physiological, is often held responsible for mistakes in diagnosis. He distinctly declared that "teething is frequently associated with pathological effects, that serious symptoms may be present;" but that all cases of infantile pathology, such as "inflammation of all the external and internal organs, the brain and its membranes, the air-passages, the lungs, etc., as also vomiting, diarrhœa, dysentery, etc., are not infallibly the result of teething." Our correspondent maintains that there is "no difference of opinion between him and Dr. Butler," unless it be that he cannot accept the statement that "teething is *the only assignable cause* of some of the diseases occurring during the dentinal epoch. Just such causes commonly occur long after dentition is completed."—ED. D. D. J.]

To The Editor of DOMINION DENTAL JOURNAL:

SIR,—Much thought is being exercised regarding "Quackery"; yes, much of it abounds. Some think that the term means advertising. Does it? Then the largest portion of our calling are more or less in it, and have been from the earliest.

Quackery involves the spirit of dishonesty; advertising does not, necessarily. Quacks tell the public that they can do things that cannot be done. They say too much. No dentist can "guarantee" his service to be every time successful. But most of those that came into practice from the thirties to the seventies did so. We commenced in '52, and our circular to the public "guaranteed." We followed the practice that was common around us—we started in New England. Our next neighbour was ahead of us: he "loaned temporary sets" for use until the mouth was ready for the "permanent set." It not uncommonly turned out that the borrower, for reasons best known to the parties, left the one that loaned the "temporary set" and chose another practitioner for the "permanent set." In these things they were only following the "customs of the country." In the early days customs were cruder and somewhat coarser; now, things are changed. Everything is on the line of the "æsthetic." We do not intend that any one shall see our motives but ourselves. The spirit of human nature is just the same in all these things as ever. Getting ahead of our fellows is going on all the same. If men are questioned *how* they do it, they tell you, "Oh! its easy, if you know how." It often calls for the putting of the hand into the pocket; that is easy if the one doing it has been fortunate. "If he can't get on the police force because he is too ignorant, then the order comes from headquarters—put him on the School Committee."

Only as men get away from their dire needs and their inborn ambitions do they drop the multiplicity of ways of emphasizing their superior qualities. As we view the public, on general principles they will clamor for the one that "guarantees" the most of the "impossible." Barnum was quite right—"The public *do* like to be humbugged." We are going to see more of it. The commercial age is tenaciously fastened upon us as a people.

It is the age of gold, and the nature of man's love for it will too often cause him to sacrifice *everything* for it, that he may only get it. There is also to be the opposite, and it is this quality of the *real* that holds the *unreal* against our radical distinction. We have no war to wage with our fellows over this matter. We are *sure* that as we are brought into the *real* this will be our safeguard from any of the pernicious influences of the *unreal*. We are more and more certain, as our hair whitens, goodness is the *best* quality of living for neutralizing the *evil*. "Good suggestions" may be offered and denunciations hurled, but an unselfish living will do much to stay the tide of the selfish life.

There is no way that evil can be overcome but with good. The natural man *cannot*, and *does not*, see the truth of this. Yet it is *true*. We are waiting in silent hush to know the truth of the possibility that the dental profession has, at last, a munificent endowment from the princely fortune of the late Dr. Thomas W. Evans, of Paris. It is said that his estate is close upon $35,000,000, and that the bulk of it has been left for the purpose of elevating the dental profession of America, and this means a general elevation. We hold our breath with gratitude that this good fortune has really come to us.

It will enlist all the wisdom we possess for the best distribution of so colossal a sum of money. It ought to bring out the best talent, and give it a worthy recompense for a life's bestowal of it for the advantage that it can be to those that may be won to a future educated profession ; and, more, will we not be able to maintain our claim, that we are an independent profession, by being able rightly to stand side by side with any of the learned callings? May it not be the bringing of the "Tiptop blue blossom" that so often inspired the heart of our much-loved brother, the late Dr. Atkinson? How he longed for such a day to come, that we would have the funds to realize the lofty consummation of his dearest thought. We do not think many really appreciated how dearly he held the calling of dentistry. Our intimate acquaintance with him for a term of thirty years made it very real to us, and we shall enter into the—possible—realization in our day, for we yield the palm to no one for a stronger love for their calling than during our forty-four years of practice. G. ALDEN MILLS.

New York, 33 East Sixty-second, November 28th, 1897.

"GIVE THE DEVIL HIS DUE."

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—I think you would find it would make you more friends if you would drop your constant attacks on dentists who do not see if respectable merchants use sensational ways of attracting attention in the papers, why dentists may not do it too. For my part, I uphold your policy of exposing open quackery and the lies published in the advertisements of most of the sensational advertisers, but that is not the point. I ask you in all fairness, why is it more objectionable for a dentist to use a golden tooth over his door, than a physician to use a golden pestle and mortar? Why is it wrong for a dentist to use a show-case at his door, and right for a clergyman to use the sensational tricks that have become the fashionable means of attracting the people to the church? A man may be a pillar of his church, but he may act as a merchant in business or trade in a way he must not act were he a dentist. Look at our daily papers, filled with lies, and deceptive baits and bargains offered openly by our leading merchants. Run your eyes down the Saturday "Church Notices," and see the catchy sensational headings of the sermons, to be preached next Lord's Day.

Why is it wrong for the reporters and editors of the daily press to use startling and sensational headlines and catching titles, and right for the parson to do the same? The public, it may be said, are to blame. Well, I answer in the same way, "The public are to blame." Our dental associations of Canada do something to interest and educate dentists, but what do they do to interest and educate the public? Your journal is not seen by the public. I admit it would be a bad thing for the quacks if it were seen and read by the public. Well, now, what is the matter with the associations doing something in the local press just as regularly as the quacks do something? If one man can, why cannot a united force of an association? I advertise "sensationally," if you like to call it, and I mean to keep it up in spite of anything, until I see some action on the part of the societies which will reform the public. In the meantime I think my sensations just as justifiable as that of the merchant that trades—or the clergyman.

Yours, etc., A "SENSATIONAL" ADVERTISER.

WHY IS IT?

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—In looking over a quarter of a century of practice how little general advancement can be tabulated? A few, very few in the profession have advanced original methods, and as small a percentage of practitioners have adopted them. This would seem to prove that dentists are principally imitators, and that the teachers in dental schools are not inventors. With the exception of crown-and-bridge work how much is there new in twenty-five years? We read in publications written in the sixties of the same results as are now demonstrated in treating abscessed teeth, orthodontia, filling teeth, and pyorrhea alveolaris. In all this time it is safe to say that not five per cent. of dentists handle these cases differently than then. The young men seem to know no more than in those days Why is it? G. L. CURTIS, M.D.

JUNIOR CRITICS.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—One of our graduates who was chiefly distinguished for his tact in keeping his mouth shut, and assuming a superior wisdom, got his L.D.S., by "the skin of his teeth." He has never put his foot into any of our meetings; has never contributed a line to any society or journal, and I predict he never will. But like some others of his kind, he makes a business of depreciating more experienced dentists, which, of course, he cannot do without praising himself, as the natural inference is that the critic is superior to the man he criticizes. I think if a young man feels it is necessary to his success to speak slightingly of any respectable confrere, much less of those who have won success he has not, he is a pretty mean sort of a fellow.

Yours, ———

[So think we. But "curses like chickens come home to roost." Such mean conduct may have temporary success, but in the long run it does not pay. It hits back some time or other.—ED. D. D. J.]

Medical Department.

Edited by A. H. BEERS, M.D., C.M., D.D.S, L.D.S., Cookshire, Que.

PREVENTION OF PNEUMONIA FOLLOWING ANÆSTHESIA.—W. F. Whitney (*Boston Med. and Surg. Journ.*, September 23rd, 1897) refers to the frequency with which pneumonia follows ether anæsthesia. It is of the same type as the ordinary fibrinous form, and shows numerous micro-organisms, especially the pneumococcus. The infection, he thinks, takes place from the mouth to the lungs through the air passages. He therefore recommends a thorough aseptic cleansing of the mouth two or three times in the twelve hours preceding anæsthesia. The nose also is to be douched, and the anæsthetic cone sterilized.—*British Med. Journal, Nov. 6th, 1897.*

A CASE OF SEPTIC PNEUMONIA.—The following case of undoubted septic pneumonia seems worth recording: C. H. H., aged 71 years, had been suffering from spinal paralysis for three years, and was in very feeble health, On September 25th he had a rigor, his temperature was 103° F., and the respirations 60. The following morning the right lung was almost entirely consolidated; he was scarcely conscious, and was breathing stertorously. I removed a dental plate from the upper jaw, and a gangrenous condition of the mucous membrane of the hard palate revealed itself; the stench was horrible beyond description. There is no doubt that the poison he had been inhaling and swallowing was the cause of the pneumonia. His man-servant, who had been in his service for several weeks, said he was certain that the plate had never been removed during that time. Death took place in less than three days from the beginning of the attack, the temperature reaching 108° before the end.—ARTHUR TROWER, *British Med. Journal, Nov. 6th, 1897.*

Tit Bits from the Editors.

WHEN it is remembered that no two cases in practice are precisely alike in all their details, it will be seen how important it is to have the reasoning faculty well developed in order to always attain the best results. Unfortunately, it is not within the province of the teacher to deal with all the variations of all the special cases. The most that he can do is to teach the principles of his subject, and appeal to the intelligence of his students to apply those principles to individual cases. Happy is the teacher who has for students a class imbued with the necessity for reasoning out the relations of cause and effect in all they do. The student who early learns to think for himself will not only prove a source of satisfaction to his professors, but he will each day of his college course be paving the way for future proficiency in practice. Think and reason, reason and think.—DR. C. N. JOHNSON, in *The Bur*.

REFERRING to the great discovery of Professor Rontgen, and the applicability of the rays to gunshot injuries, and the impaction of foreign bodies, the editor remarks: "From the considerable difficulty experienced in adjusting the apparatus to the mouth the results, so far as the teeth are concerned, have perhaps not been quite as perfect as they were expected to be, still a good deal has been done. . . . This suggests the value of the method of examination in those cases in which the unerupted bicusped is removed to allow the incisors to fall back—an operation sometimes attended with considerable difficulty when the bicusped is abnormally placed to the second temporary molar. The production of a photograph, such as shown by Mr. Harrison (at the meeting of the Midland Counties Board of the B. D. A.), would be a valuable preliminary to the operation. Owing to the difference between the density of the tooth issues and the open bony tissue of the alveolar portion of the jaws, the teeth stand out in Rontgen photographs quite clearly from the surrounding bone, but usually —especially in the upper jaw—show a considerable amount of distortion. As far as methods are concerned, we believe the best results have been obtained by using a sensitive film in the mouth rather than a glass plate, the film, of course, incased in some light, tight material impervious to moisture, being capable of firm adaptation to the mucous membrane of the mouth. We cannot but think that there is still a future for this method of diagnosis in dental surgery, and with the more perfect knowledge of the nature of these mysterious rays, which time will assuredly bring, many of the difficulties attending the production of the radiograph will be removed."—*Journal of British Dental Association.*

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

GERMAN EDITOR:
Carl E. Klotz, L.D.S.,
ST. CATHARINES, ONT.

FRENCH EDITOR:
J. H. Bourdon, L.D.S., D.D.S.,
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COOKSHIRE, QUE.

EDITOR OF QUERIES:
R. E. Sparks, M.D., D.D.S., L.D.S.,
KINGSTON, ONT.

CORRESPONDING EDITOR:
W. R. Patton, D.D.S.,
COLOGNE, GERMANY.

EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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AUDIRE ALTERAM PARTEM.

From time to time, we have published letters from quacks and quack-imitators, whose resentment was provoked by exposure of their humbug and immorality. Some of them were amusing in the audacity of their abuse; some, rank in their ignorance; a few, frank and fair in their argument. We publish in this issue, under our correspondence, "A 'Sensational' Advertiser," the best contribution to the latter we have received. While it starts with specious premises, which tumbles it head and ears into false conclusions, it contains elements of truth which we find it hard to deny.

As our correspondent insists upon the professional man enjoying the same right to sensational advertising as the departmental store, we are at once at loggerheads. That question has been threshed out in the journals in all countries for the last fifty years, and it would be useless to revive fully the *pros* and *cons*. The public may be deceived by the merchant's exaggerated offers in print; but the public are better judges of the value of the goods they can examine for themselves, than they can possibly be of any service of the physician or dentist. It is only in such a Province as Quebec, where thirty-five per cent. of the population cannot read or write, that the golden pestle and mortar, the golden tooth and the show-case, seem necessary. A large proportion of the French people only discover a dentist as they find out a shoemaker. They look for the tooth on exhibition, as they expect the boot over the door, or in the window. We believe that Quebec has a monopoly in the Dominion of this distinction.

Our correspondent uses an argument with which we are in full sympathy. Sensationalism in the pulpit is the bane of the Church. There are stagy parsons who are no better than our quack-imitator dentists. The latter thinks the public need startling and sensational advertisements to compel attention to their teeth ; the former think they need them to compel attention to their souls. The pulpit is quite as full of charlatans as any other profession ; men who speculate in the cure of souls as flippantly as our quacks traffic in their treatment of the teeth. They dishonor the cause for which they are ordained ; their services are as dust and ashes—a religious kindergartenism which ministers to the senses, and leaves the spiritual unfed. But, happily, these pyrotechnical parsons do not constitute the backbone of the Church. As a rule, their influence is confined to their own ecclesiastical kindergarten, and the sensational use, like our own quacks, they hungrily make of the press. Because there was one Judas, we do not accuse Paul, or John, or Matthew of perfidy. The Church is not made, though it may be somewhat marred by its apostates, and so in our professions. The black sheep do not constitute the flock ; the sheep remain sheep though a goat get among them.

From what we know personally of our correspondent, we believe that the inaction of our Associations in the matter of influencing the public, led him, as a measure of self-defence, to abandon his former ethical methods. The question seemed to be for him—" Would he watch his practice passing to his advertising neighbor, and not imitate his methods ? The public run to meet humbug ; they hug it, even when it is unsavory. They are caught by pretence and sham and noise. Why should he not give them what they seek ? " We have repeatedly suggested, and repeatedly published suggestions, means of placing before the public reliable and impersonal information on dental matters. It would pay as a profession, to have a fund in our Associations specially for the purpose.

" GOING ON TEN."

This issue of the DOMINION DENTAL JOURNAL is the beginning of its own " wooden wedding." It has entered its tenth year, having succeeded the *Canadian Journal of Dental Science*, which began thirty years ago. The publisher issued Vol. I. in 1889 as a quarterly, at $1.00 a year, which it remained for two years, when it was increased to a bi-monthly, and with Volume V. it became a monthly, at the same subscription. Our readers can see that the publisher has kept his promise to the profession, Both subscribers and advertisers get the benefit of the more frequent appearance. The JOURNAL is untrammeled in every respect. It favors none, and fears none. It hates quackery and quack-imitation, and will gleefully continue the work of their annihilation. In this it is only the echo of the wishes of all honest and upright dentists.

THE CARE OF VULCANIZERS.

In spite of the fact that the vulcanizers sold by reliable manufacturers are submitted to severe tests by hydrostatic pressure—some of them to a pressure of nine hundred pounds to the inch—explosions have not been unfrequent, generally due to the ignorance of the assistants who watch them, or pretend to watch them, during the process of vulcanization, and not a little to the carelessness of the dentists themselves, who fail to impress upon the students that these little steam boilers require as much attention as boilers of a greater capacity. In the first place, it does not pay to use cheap vulcanizers any more than cheap German tools and instruments, or the cheaper grades of artificial teeth. In the next place, one should familiarize himself with every part of the machine : realize the importance of keeping it and its belongings clean, and adhere strictly to the rules laid down by the manufacturers. Where thermometers are used it ought not to be forgotten that too rapid and too great heat at starting, especially if the flame is allowed to surround and reach the top cover, may deceive, and that the thermometer at 320° may really indicate only the temperature of the cover, and not that of the flask inside. The safety disk used on some modern vulcanizers should not be forced on too tight, as this weakens them. The boiler should on no account ever be perfectly full of water : at least, one inch or more of steam room should be left above the water. When the heat is first applied, the valve for the escape of steam should be opened for a few minutes to allow a free escape of steam, as this leaves in the boiler, after the valve is closed, an atmosphere of pure steam, and precaution should be taken not to use any more force in closing the valve than is necessary to make it steam-tight. We are warned, too, not to daub too much blacklead or soapstone powder about the packing. In fact, it is better never to use any if it can be avoided. Oil should never be used, as it rots the rubber packing, and may become gummy and cement the core to the pot, to the damage of the rubber packing. Too frequent use of the blacklead and soapstone wears away the screw thread. In heating up, the flame should not be larger than will cover the bottom of the boiler. If students can have these simple instructions put into their brains, it may save some of them from having their heads blown off. If they will not attend to them they deserve to be killed. Thermometers, in the cities, ought to be relegated to the list of things which are obsolete in the laboratory. Proper gas regulators and steam gauges should be used, and dentists owe it to themselves and their students not to neglect every proper precaution in the use of these laboratory demons.

EDITORIAL NOTES.

THE practical notes in our November issue should have been credited to Dr. J. Austin Dunn, of Chicago, the inventor of that well-known simple and aseptic syringe which bears his name.

DR. CATCHING'S gold mine will soon be on the market. You will get several hundreds of shares for $2.50. We can guarantee our readers in Canada that each share is worth the money asked for the lot. We have quadrupled our money on most of the shares many times. Address, Dr. B. H. Catching, Atlanta, Ga. He calls it "Catching's Annual Compendium of Practical Dentistry." We call it a dentist's gold mine.

"THE Lofoten Islands and their Principal Product" is the title of one of the handsomest brochures we have seen for some time. It describes the country in which the cod fish is caught and the method of extracting the oil. The beautiful engravings of scenery, with fish scenes, characteristic of the section, abound in the text. Anyone sufficiently interested in natural history or the source of one of our chief medicinal products. cannot do better than write Parke, Davis & Co., Detroit, for a copy of this elegant brochure.

MR. CLARK, of the A. C. Clark & Co., Chicago, manufacturers of the well-known Clark fountain spittoon with revolving inner bowl, was in the city lately and created quite a flurry in the dental trade. He claimed that the following firms were infringing his patents viz : H. P. Temple, H. W. Parker & Co., Clark Dental Manufacturing Co These firms all made a settlement with Mr. Clark, however, and will protect their customers. The A. C. Clark Co. are making arrangements to manufacture in Canada so that the profession will still be able to secure this valuable and necessary adjunct to the dentist's office equipment.

Dominion Dental Journal

Vol. X. TORONTO, FEBRUARY, 1898. No. 2.

Original Communications.

THE SCIENTIFIC SPIRIT.

By B.

What, after all, has given dentistry a claim as one of the learned professions? Has it been the thought and investigation of its scientists, or the ingenuity of its practical inventors? To be just to both, we must give both some meed of praise; but without the scientific spirit, which has been born within the memory of most of us, dentistry, with all its practical inventions, would be nothing more than a mechanical trade.

One of the difficulties with which teachers in this country, as well as in the United States, have to contend, is the feverish anxiety of students to anticipate all the first principles and scientific routine of study, by a premature rush into practice. It has been commonly attributed to the climate. Some critics are disposed to place the onus upon the teachers. Indeed, if professors had no will of their own, there would be no scientific spirit in the rostrum, and the time would be occupied only in the shallow and short-sighted instruction which has nothing in it but the purely mechanical. Men who can neither read nor write could be taught along such lines with equal success, were the purely practical the only thing in the curriculum. It is just such an infatuation which moves the policy of the Patron party in our policy. It is this which governs the aim and ambition of our quacks. To them the scientific spirit is a theoretical and scholastic intrusion upon the "purely practical" spirit, which "pays."

The "purely practical" is attainable at any period of life. To keep up with the practical progress of the times is a daily necessity. But the scientific spirit which inspires one to study and comprehend first principles is, as a rule, the prerogative of youth and early manhood. It is for this reason that we reiterate the advice to students, to avoid the folly of leaping into active practical work over obscure or buried scientific principles which alone can make the practical intelligible. It is an unnecessary leap in the dark. From such training not only are ignorant practitioners, but incompetent teachers made. The man who thinks he is fully equipped as a dentist, because in a session or two he has learned to pull, plug and make teeth, is quite sure, as a professor, to avoid scientific methods of instruction of which he is gloriously ignorant.

There are students by the score taught and turned out professedly competent as merely practical men, who were never taught to think. The only part in that operation of the intellect they ever perform, is confined in student life, as it will be in practice, to the contemplation of dollars and cents. We urge such boys to stop and think!

PRESCRIPTION WRITING.

By L.D.S.

The *New York Medical Journal* quotes from an article in a druggist's periodical, on the subject of drug names and prescription writing, which may apply in part to dental practice. The prescription pad is not used as much as it should be by the dentist, and in the matter of lotions, etc., for special pathological condition of the oral cavity within the prerogative of our practice, we have many important demands upon our knowledge of prescribing. While we run no such risks as the general physician, even our limitations demand great care to avoid confusion and error, not to speak of the less formidable mistakes of chemical incompatibility. The *New York Medical Journal* quotes the following formula:

"℞	Hydr. chlor..................	gr. xx.
	Tinct. hyosey.................	ʒ i.
	Aquæ......................	ʒ ix.

"M. Draught to be taken at bed time."

"Which chloride of mercury is intended?" asks the writer. "The context shows plainly that neither is wanted but chloral hydrate. Is it not all wrong that human life should thus be trifled with?"

To which we may add, "Does it not seem all wrong that the laws of a State permit the most dangerous prescriptions to be compounded by young men of meagre and insufficient preliminary and practical training?" We happen to be familiar with the requirements for the practice of pharmacy in most of the States, and we do not hesitate to affirm that there is not one legalized prescriber, from the Atlantic to the Pacific, in Canada who would be so dense and ignorant as to suppose that a chloride of mercury was meant in the above prescription. The education of the pharmacist, like that of the dentist and the physician in Canada, starts in the right direction by a thorough preliminary examination almost equivalent to that of the Bachelor of Arts of our Universities.

HINTS.

By a Lazy Man.

1. You can cut vulcanite with a file better when both are dry than wet. If you think you need a new file, dip your plate in dry plaster of paris, rub it off with a wheel-brush, and often you will find that the fault is not in the file.
2. After you have polished your plate, sprinkle a little dry plaster on it, and give it a run over the soft wheel-brush.
3. Tack a square piece of bed-tick or apron cloth under the part of the bench where you work. It will always be there. Pull it over your knees when you sit there to work. Keeps your pantaloons clean, and often keeps you from saying naughty words, as it catches teeth you might drop on the floor.
4. When your rubber overshoes wear out, keep the soles. Very handy if fastened on a block convenient to use. The heels make good bench blocks.
5. Keep your old kid gloves and wear them when sand-papering or polishing artificial sets. Rub vaseline into your finger-nails, and over your fingers before putting on the gloves.
6. When your dental engine kicks or makes a noise at the joints, oil it a little. If that does not stop the row, do not swear at the manufacturer until you have got down on your marrow-bones and tightened up screws that may be loose. If that succeeds shake hands with yourself; if it does not, smash something. It will ease your mind.
7. Cover your dental engine with a cover the shape of an old candle extinguisher.

Proceedings of Dental Societies.

"MAKE AN APPOINTMENT."

The meeting of the Ontario Dental Society, March 3rd and 4th, will be one of more than usual interest to the profession in this Province.

You cannot afford to miss this gathering. To hear Dr. Black discuss dental alloys and amalgams, and to see his elaborate demonstrations of the shrinkage, expansion, flow, etc., of different amalgams, will be worth a greater effort and sacrifice than you'll need to make to get there. Don't become fossilized. Mingle with your brother dentists once a year. Turn up the date, March 3rd and 4th, in your appointment-book now, and make an appointment right across the page, thus: "Ontario Dental Society, Toronto."

ONTARIO DENTAL SOCIETY.

To the Members of the Dental Profession in Ontario:

At the meeting of the Ontario Dental Society, in July, 1897, it was decided that the meeting for 1898 should be held at a time to include the 4th of March, the thirtieth anniversary of the passing of "The Ontario Dental Act." It was thought desirable to get together to celebrate this thirtieth anniversary as many as possible of those who were in practice previous to March 4th, 1868, that they might renew old friendships, and that the younger men might make the acquaintance of these pioneers to whom they owe so much, before they all pass off the stage of action.

To add additional interest to the meeting, the Toronto Dental Society, the Faculty of the College and our Society have united to secure the presence of Dr. G. V. Black, Dean of the Dental Department of the Northwestern University, Chicago, who is known to all readers of dental journals as the foremost experimenter with dental amalgams and amalgam alloys. Dr. Black will bring with him the instruments, designed by himself, to measure the strength, flow, shrinkage, or expansion of the various amalgams, and will demonstrate the best formulas and manipulations. Everyone familiar with Dr. Black's work speaks in the highest terms of its great practical value.

We trust that the interest of this anniversary occasion and the attractive programme provided will insure the attendance of a large number, both of the "old-timers" and of the younger men. All licentiates who sign the Constitution and Code of Ethics are eligible for membership on payment of a fee of $1.00.

Members coming by rail had better buy ordinary return tickets.

J. A. MARSHALL,
President Ont. Dental Society.

J. E. JOHNSTON,
Secretary.

The tenth annual meeting of the Ontario Dental Society will be held in the Dental College, 93 College Street, Toronto, March 3rd and 4th, 1898.

PROGRAMME.

(Provisional.)

THURSDAY, MARCH 3RD.

10.30 a.m.—Business session. Election of officers. Payment of fees, etc.

2.00 p.m.—Address by Dr. G. V. Black, of Chicago, "Dental Amalgams and Amalgam Alloys," with experiments and demonstrations.

7.45 p.m.—Papers :
  (1) "Advertising." Dr. M. G. McElhinney.
  (2) "Evolution of the Teeth." Profs. Ramsay Wright, M.A., and J. J. Mackenzie, B.A., (with lantern views.)
  (3) "Alveolar Abscess," (with lantern views.) Dr. J. B. Willmott.

FRIDAY, MARCH 4TH.

9.45 a.m.—Anniversary session.
 Papers :
  (1) "Dentistry and Dentists in Ontario before 1868." H. T. Wood, M.D.S.
  (2) "Thirty Years' Development since 1868." Dr. J. A. Marshall.
  (3) "Our Responsibility for the Future of Dentistry in Ontario." Dr. R. J. Husband.
 Communications from and remarks by old members.

2.00 p.m.—Papers :
  (1) "Preservation of Dental Pulps." Dr. J. A. Sangster. Discussion by Dr. J. F. Ross.
  (2) "Treatment of Abscess." Dr. D. C. Smith. Discussion.
 Routine business.

TORONTO DENTAL SOCIETY DINNER.

The first annual dinner of the Toronto Dental Society was held at Webbs' on the evening of January 25th, and was a success in every sense of the word. About fifty members of the Society and their professional friends in the city sat down to dinner, served in Webbs' best style. After dinner, the toast, "The Queen," was duly honored, after which Dr. Webster, of Collingwood, proposed "The Toronto Dental Society." This was responded to by the President, Dr. A. J. McDonagh, who took the opportunity to invite all present who were not already members of the Society to join. One of the objections frequently met is that some are members of our Society who formerly advertised. This is true, and if the Society has succeeded in saving one dentist from the error of his ways, it is fulfilling a noble purpose.

The toast, "The Dental Profession," was proposed in a thoughtful speech by Dr. J. B. Willmott, who deplored the lack of the fraternal spirit in our ranks as a profession, and thought this banquet a sign of the approach of better things. The toast was responded to by Dr. J. E. Wilkinson, late of Parrsboro', N.S., who has recently begun practice in Toronto.

"The DOMINION DENTAL JOURNAL" was proposed by Dr. M. W. Sparrow in a witty speech, and responded to by Dr. G. S. Martin, who made an appeal to the members of the profession present to read more widely in dental literature, and also to contribute to the journal any points of practical value.

The toast, "The Undergraduates," was proposed by Dr. Ball, who welcomed the oncoming hosts of students in the kindliest manner. Mr. Williams, of the class of '98, responded in an eloquent and spirited speech, thanking the profession for the kind manner in which the toast was received.

Drs. M. W. Sparrow, Zeigler, Peaker and Cobban sang acceptable solos, which won well-merited encores. Dr. B. F. Nichols' whistling solo, to his own accompaniment on the piano, is worthy of special mention.

Dr. W. E. Willmott explained that the Toronto Dental Society had united with the Ontario Dental Society and the Faculty of the R. C. D. S. in bringing Dr. G. V. Black, of Chicago, to Toronto in March, to demonstrate his researches and discoveries in dental alloys and amalgams, and that all who were members of both societies would be in a position to participate in the treat in store.

The committee in charge of the banquet, Drs. W. Cecil Trotter, J. B. Willmott, McDonagh, Eaton, J. F. Adams, J. E. Wilkinson, deserve great praise for the success of this first annual function.

MONTREAL DENTAL CLUB.

Some of the junior members of the profession in Montreal organized a society under the above name, and have had very interesting meetings. The idea is the same as that of the Montreal Dental Society, which a few years ago had a very active existence, and the many papers of which were published in the predecessor of the DOMINION DENTAL JOURNAL. It is a good idea. The officers elected for the current year are as follows: President, Dr. Peter Brown; Vice-President, Dr. W. J. Giles; Secretary, Dr. R. L. Watson.

DENTAL SOCIETY ANNOUNCEMENT.

The Vermont State Dental Society will hold its annual meeting at Hotel Berwick, Rutland, March 16, 17 and 18.

Translations

FROM THE FRENCH DENTAL JOURNALS.

By J. H. Bourdon, L.D.S., D.D.S., Montreal, Que.

Poisoning by the Use of Cataphoresis.—Dr. Moore, of Frankfort-on-Maine, gave an account of a case of poisoning by cocaine, transmitted by an electric current. After close inquiry to discover the cause of the accident, he was convinced that the apex of the tooth was very large, and that the cocaine was rapidly thrown into the system.—*Zahnarztliches Wochenblatt-Odontologie.*

Death Caused by a Filled Tooth.—A railway superintendent had two teeth filled. One of them ulcerated, swelling of cheek, pus, etc. The tooth was extracted, but it was too late. A consultation of three doctors was called, but it was of no avail to check the infection. Four days after the extraction the patient died of an empyema in the thoracic cavity.—*Correspondenz-Blatt Odontologie.*

Abscess in the Brain.—A case of dental origin, which ended fatally, is related by Dr. Silax before a meeting of the Medical Society of Berlin. The patient, a boy of twelve years, complained of excruciating pains, with an exophthalmia of one eye.

An opening was made in the frontal sinus, but without any result. An infectious meningitis appeared after nine days. The autopsy showed that the superior part of the brain was coated heavily with pus; the base of the brain was free from pus. This abscess had worked its way for some time, but had not caused much trouble ; nevertheless it had brought the inflammation of the antrum, caused by a decayed molar.—*Zahntechnische Reform Odontologie.*

AT ROCKENDORF, GERMANY, a young lady who was to get married in a few days, by accident swallowed an artificial denture of nine teeth ; the plate stopped in the asophægus. On the advice of her physician she was directed to the surgical clinics of Jéna. They proceeded immediately in practising œsophagotomy. The operation was performed successfully, the plate withdrawn, and the act of healing was done rapidily. To know exactly the point where the plate was located after deglutition, X-rays of Rœntgen were used. Having obtained a photograph it enabled considerably the operators. One peculiar effect of the rays on rubber plates is that the rays will pass through the rubber showing only the clasps and the artificial teeth.—*Zahnarztliches Wochenblatt-Odontologie.*

Medical Department.

Edited by A. H. BEERS, M.D., C.M., D.D.S, L.D.S., Cookshire, Que.

AT the Odontographic Society of Chicago, in discussing a paper entitled " Report of a Case of Carcinoma of the Buccal Mucous Membrane," Dr. Truman W. Brophy made the following remarks : The presence of carcinoma in the mouth is apt to be overlooked by the average practitioner of dentistry. The reason why these growths develop so frequently within the mouth, is that the membranes, the tissues generally of the oral cavity, are most subject to irritation. The diseases of the teeth themselves, the breaking-down of tooth structure, the ragged, broken, sharp edges of the teeth that come in contact with the mucous membrane of the cheeks, the lips and the tongue ; the presence of irritants in the form of tobacco, are the exciting causes of carcinomatous growths within the mouth. We have not anywhere else in the human subject a part of the body so liable to be injured as the mouth. The disease which terminated the life of General Grant was of dental origin. The General paid no attention to the slight irritation at the base of the tongue, caused by a broken molar tooth. He continued to smoke ; the tooth continued to irritate the parts, lacerating the surface, and by-and-bye the tissue began to develop new cancer cells, and almost simultaneously with the development of new cells was a breaking-down and a development of a characteristic epithelial growth. The diseased process began to extend down into the pharynx, involved the lymphatic glands, and when it reached a point that made it almost impossible for him to tolerate the pain he applied for relief, but it was too late. The case of the Crown Prince of Germany was mentioned. He neglected the dental organs. In his case there was a breaking-down of the teeth, the formation of pericementitis and alveolar abscess and irritation, followed by fistulous openings, the development of a growth upon the surface of the membrane almost precisely like that of General Grant's, and which terminated his life. These cases impress upon us the importance of extreme care, from a hygienic and dental standpoint, in the way of dental manipulations in the case of the teeth and of the mouth.—*Dental Review.*

CARIOUS TEETH AS A MEANS OF ENTRY INTO THE BODY FOR THE BACILLUS OF TUBERCULOSIS.—The following is reported in *La Revue Médicale*, May 23, 1896: Dr. Strarck, of Heidelberg, has reported two cases that clearly show that a decayed tooth may be the point of departure for the invasion of the organism by the bacillus of tuberculosis. In the first case, a young man after a violent toothache had enlargement of the submaxillary lymphatic ganglia on the same side as the affected teeth—the left lower molars. During the three months following, the tumor increased to the size of the fist; painless, irregular of surface, soft and elastic in parts. On the *right* side there was slight enlargement of submaxillary and subclavicular glands, and prolonged expiration in upper lobe of lung. The teeth were extracted, and the tumor, which was in a state of caseous degeneration, was removed. Microscopic examination of the teeth showed numerous bacilli of tuberculosis. The second case, in a girl of fourteen, was very similar. Large numbers of bacilli were found in the extracted tooth. In three cases resembling these two in their clinical aspect, bacilli were demonstrated in the cervical glands, but none could be detected in the carious teeth. The author believes that not only tubercle bacilli, but also other pathogenic microbes can penetrate the body *via* decayed teeth. Dental caries appears to be also the most common cause of ordinary chronic lymphadenoma in infants. In one hundred and thirteen cases of infants with enlarged submaxillary ganglia no other cause could be determined in forty-one per cent. of the cases. We see from this the extreme importance of hygiene of the mouth, from the point of view of prophylaxis, during the early years of life.—*International Dental Journal.*

Tit Bits from the Editors.

WE contend that it takes special gifts and talents to teach ; but we also contend that it takes no special talent or gift to discover that *some* graduates being turned out, even in this day and time, are not competent to practise dentistry intelligently.—*American Dental Weekly.*

PROBABLY one of the most frequent causes of the continuance of diseased conditions is due to the neglect of dentists in making careful diagnoses of diseases present in the mouths of their patients. As a rule the patient is conscious of some source of pain or irritation, which leads him to place himself in the care of the dentist. The dentist corrects the evil, looks for some more cavities, removes a little salivary calculus, and dismisses the patient. He generally fails to study the mouth, with a view to making either esthetics or practical improvements. In other words, he fails to be looking for trouble. A case in point may be cited at this time. The patient has been in the hands of a good, conscientious, honest and able operator for years, who always " cleaned and filled his teeth." A careful examination at once revealed the fact that one side of the mouth had not been used for mastication for years. There was no complaint as to any particular tooth on that side, on the contrary the patient said the dentist told him everything was " all right." The losses on both sides were equal, and no reason seemed to exist why one should be used in preference to the other. Careful tapping ,and tests of heat and cold seemed to indicate nothing wrong, but the patient did remember that the insertion of a large amalgam filling in the upper first molar on that side was followed by considerable pain, but that it had been " all right now for years." It seemed best to tap the tooth ; the pulp was dead, the root canals while not necessarily filled with offensive matter, contained material in a stage of decomposition. The slight soreness led to the abandonment of this side of the mouth, which was abetted by the difficult eruption of a third lower molar, whose environment was constantly in an inflamed condition. Having found, in addition to calculus, caries and blind abscess, also eruptio difficilis, a search for further discoveries was instituted, and this was rewarded by finding abrasion, two teeth sensitive from erosion near the gingival margin and one tooth attacked by pyorrhœa alveolaris. The latter was confined to about one-half of the circumference of the root of a lateral incisor, and its form was of that apparently inoffensive yet destructive nature which would have resulted in the loss of the tooth ere the patient could have been aware of the seriousness of the condition. These diseases were all corrected and the patient instructed to learn the use of the disabled side; at the end of six months (except for the abrasion which is the result of using one side only for years) both sides of each arch are in an equally healthy and useful condition. We suggest to the busy dentist to take time to look for trouble, and the dentist who is not so busy can find no more useful and advantageous employment than to study the conditions which he will find if searched for, and which he must learn to recognize while looking for trouble. Both classes of operators will be more useful to the community.—*The Dental Review.*

DRUG TOLERATION.—During the past few years the writer has noticed that many mouths bear the mark of local drug toleration. This is more especially noticeable when for some reason the person habituated to the use of washes and lotions discontinues the habit. We will see then that the saliva and mucus is less copious than when the drug or combination of drugs is dispensed with. The more general use of mouth washes and liquid dentrifices does not date back much beyond the period of the introduction of antiseptic surgery. Formerly the washes and mouth lotions were gotten up to have an agreeable taste and a perfumery odor. Latterly the majority of them make a pretence at least of being powerfully antiseptic. In many cases such claims are preposterous, as the antiseptic and disinfectant is barely strong enough to destroy the most innocent microbe. In a state of health and normality of the mucous membrane, what need exists for the use of such substances? Would not warm water and then cold be even better than the artificial stimulation of the mucous membrane, which, after a time, craves such stimulation? Would it not be more beneficial to humanity if the pastes and lotions were only used to correct a disorder than to use them to keep up a disagreeable and hurtful habit? We do not decry the use of such substances when needed to assist nature to a return to health, but we protest against the whole population being told that it is a necessity—that such general use is beneficial, etc., etc. The normal mouth not contaminated with tobacco or chewing-gum is much better with water, hot and cold, and the sparing use of the tooth-brush—which is one of the abominations of civilization—than to be fed daily with sprays, lotions and pastes of uncertain constitution.—*Dental Review.*

[The editor of the *Review* is highly qualified to speak *ex cathedra* on these questions; yet he differs in opinion from other high authorities. Would he tell us—apart from the vulgarity of the habit—how chewing-gum can be placed on a par with tobacco as a contamination to the natural mouth. It is not long since it was recommended as a prophylactic preserver of the teeth. What does our friend suggest as a substitute for the tooth brush?—ED. D.D.J.]

Abstracts.

Edited by G. S. MARTIN, D.D.S., L.D.S., Toronto Junction.

FROM art stores can be procured clay which, if mixed with glycerin, will make moldine or molding clay. It may be mixed with water, but that dries out quickly, and requires a new mix for each use.—*American Dental Weekly.*

THE disadvantages of ether as an anæsthetic have been overcome by combining nitrous oxid with the ether fumes. After three or four inhalations of nitrous oxid, gradually substitute ether fumes. In two minutes the patient is unconscious, and there is no choking or distress.—*London Lancet.*

TO DEPOSIT PASTE IN CAVITY.—Dr. J. H. Hughes, in the *Dental Review*, suggests that in capping small exposures, or when putting cement into an excessively sensitive cavity, he uses a stiff paste of white oxid of zinc and oil of cloves. To avoid this paste sticking to the instrument in depositing it in cavity, he uses a small piece of spunk in the pliers.

DR. TEAGUE suggests in the *American Dental Weekly* a method of crowning very hollow roots by use of a soft wooden peg the shape and size of metal pivot in crown to be inserted. The root is roughed where there is least fear of perforating it ; the peg is inserted in root, and amalgam packed around it to the margin of gum. After the amalgam is set the peg is drilled out and the crown set.

TO SHARPEN HYPODERMIC NEEDLES.—First pass the cleansing wire through so that it protrudes at both ends of the needle. Take a corundum wheel, and with the engine grind off the point of the needle with the wire at the same time. The wire can then be pushed through from the other extremity, carrying all the *debris* with it. Thus the needle will be perfectly clear.—Dr. F. B. SPOONER, *Dental Digest.*

MENTHO PHENOL.—Dr. J. Morgan Howe, at the New York Institute of Stomatology, introduced a remedy for toothache, composed of one part of phenol crystals to three parts of menthol and melting the substance. It is a fluid of pale amber color, and aromatic odor, very pungent in taste but not caustic. He finds it useful in pulpitis. Two drops to an ounce of water make an excellent mouth-wash.—*International Dental.*

WHEN caries extends to the bifurcation of roots, make a mat of two or three layers of tin, place it in the bifurcation and use it as a base in filling the rest of the cavity with amalgam.—*From "Tin Foil and its Combinations for Filling Teeth*."—Dr. H. L. AMBLER.

A DENTIST in this city made an application of arsenic in the usual manner, and at next sitting attempted to remove the pulp, but found it highly sensitive. To hasten matters he applied cocaine with the current and removed the pulp painlessly, but at the next sitting he found the arsenic had been inducted into tissues beyond the tooth. Here was the devil to pay and no funds. Don't say he should have known better—anyone might have done the same thing thoughtlessly.—Dr. F. FLETCHER, *in Dental Digest.*

USEFUL MATRIX.—Dr. T. F. P. Hodson presented to the New York Institute of Stomatology a method of making a matrix so constructed that the convexity obtains not only from the bucal to the lingual aspect, but also from the grinding surface to the cervical. From thin sheets of very thin steel, which may be annealed, a small piece may be cut to suit the case, the edges trimmed with a file and a couple of small holes punched to facilitate removal. The matrix is then laid on a piece of lead and small convex surface (such as the head of a small picture nail hardened and polished) driven down upon it with a few taps of a hammer. In amalgam filling it may be left over night, to insure no injury to the filling in removing.—*International.*

THE COMPARATIVE VALUE OF EUCAINE AND COCAINE AS LOCAL ANÆSTHETICS.—The following results were obtained from experiments undertaken for the purpose of studying the action of eucaine and cocaine: (1) The injection of cocaine is not at all painful, while that of eucaine caused a certain smarting sensation. (2) Eucaine is a vaso-dilator, while cocaine is a vaso-constrictor. With the former the field of operation is clouded by the blood. (3) Eucaine is certainly an excellent analgesic, although in deep operations the perception of pain seems to be somewhat more distinct than with cocaine. (4) In an operation with cocaine anæsthesia is still complete an hour and ten minutes after the operation, while with the eucaine it disappears after forty-five minutes. If, said M. Reclus, eucaine is less toxic than cocaine, it is still to be preferred in spite of these slight inconveniences. M. Pouchet, he said, had made sixty experiments on different animals. He had recognized that the toxicity of eucaine was nearly as great as that of cocaine. He preferred the latter, which presented warning symptoms of intoxication, to eucaine, which suddenly overcame the patient without any premonitory symptoms.—*Press Médicale.*

Selections.

DR. TELSCHOW'S NEW CEMENT.

The following quotation from *Items of Interest* appeared in the *Journal of the British Dental Association* for September 15th:—

DR. TELSCHOW'S NEW CEMENT.—(By George Randorf, Berlin, Germany). In describing his new cement, Dr. Telschow, of Berlin, writes as follows:—I have employed aluminum in my practice during many years, and the observations made by me during this time have suggested the preparation of a new filling material in which I have incorporated silicated aluminum and fluorhydric acid. This cement resists the acid in the mouth to an extraordinary degree, and in appearance exactly resembles the natural enamel of the teeth.

I may add that fluorhydric acid has a beneficial effect upon the roots of the teeth, and immediately allays the information of pericementitis. It is introduced into the cavity dry. For the preparation of fluorid you require (*a*) a glass of liquid, (*b*) a glass of powder, and (*c*) a bottle of gutta-percha and of fluorhydric acid, with which the liquid is mixed with one-third of the acid. Great care must be exercised, as the acid is a strong corrosive. The hand which holds the glass must be covered with a glove, and the acid should be added drop by drop. Should any of the acid fall on the hands they should instantly be washed with soap. The bottle must be well shaken, and the powder is then added.

The cavity to be filled must be well dried with bibulous paper, and then with hot air. The filling is introduced soft, and gradually hardens. It is necessary to shake the liquid each time before using it. A large quantity should never be prepared, as it decomposes after eight days. The filling is polished on the day after insertion, and then has a smooth, brilliant surface, indistinguishable from natural enamel.

The liquid (*a*) is phosphoric acid; the powder (*b*) is a composition of oxide of zinc and aluminum salts; the bottle (*c*) fluorhydric acid.

COMMENT.

A well-known Fellow of the Chemical Society, who has devoted a great deal of time and attention to the study of cement fillings, has favored us with the following communication concerning the above new cement:

Without any desire to discourage experiment, it will be well to caution those who are not chemists of the exceedingly dangerous nature of fluoric or hydrofluoric acid. The fumes, if not in sufficient quantity to be fatal, cause dangerous and unmanageable sores, and it would be a useful lesson to see the exceeding caution with which etchers on glass use these risky compounds. Fuming nitric acid is innocence itself compared with the fluorine acids, which will rapidly eat their way through glass, stoneware, or porcelain.

There is one point, also, in Dr. Telschow's statement which is not at all satisfactory—*i.e.*, that the new filling stands the *acids* of the mouth as well as does the living tooth substance. It will be remembered that many years ago a translucent filling was introduced which was so perfect a copy of the living tooth enamel that a filling could not be detected without the closest scrutiny and a knowledge of its position. This was similar in composition to the one now introduced, but the risky hydrofluoric acid was not used; in its place, having similar if not identical properties, a basic tin salt formed the active ingredient. This filling also stood the action of all *acids* in precisely the same manner as the living tooth enamel; but it failed in alkalis, *and it failed in the mouth.* All basic compounds of this class, including the phosphates and chlorides of zinc, offer an extraordinary resistance to the action of acids, and all fail with caustic alkalis in precisely the same way as they do in the mouth. It is therefore evident that acid tests are misleading and worse than useless; the filling of the future must resist alkalis also if they are to be permanent. The time-worn remarks about the "acids of the mouth" will not bear examination, and if the results which may be expected in practice are to be found by experiments which can only extend over a short period, the reagent to be used is a caustic alkali. The results of tests in acids, whether mineral or organic, have no resemblance whatever to the results obtained in the mouth in actual practice.—*Ash's Quarterly Circular.*

FOUR CLASSES OF DENTISTS.

By analysis it may be discovered that instead of two classes of dentists, as commonly supposed, Professional men and Quacks, there are really four, viz.: The true Professional man; the Quack Professional; the Professional Quack, and the Quack.

THE TRUE PROFESSIONAL MAN.

The true professional man, in the highest and noblest sense of the words, is a *rara avis.* He begins practice just as the true minister of the gospel takes up preaching. He is prompted by a love of his work, and a love for his fellow-man. That he earns a living by the fees which he obtains, in no sense detracts from his attitude of being a missionary. He must live, that he may continue his mission. At times he receives high fees. Indeed such men receive the very highest fees, for the people are not all fools, and merit will eventually be recognized, and its reward cheerfully given. But the professional man, while exacting large fees from the rich, takes smaller ones from the less wealthy, and perhaps nothing at all from the needy. But even in his treatment of the very rich, he acts in a professional manner. He has in his own mind a fixed valuation for the service rendered. If the patron can afford this maximum sum, it is demanded. But if the next applicant for a similar service should own ten millions instead of one, the fee would be no greater. When a patient is entrusted to his care, the thought uppermost is not, "How much can I make out of this patient," but, rather, "How much good can I accomplish; how much comfort can I afford to this sufferer?" In all services rendered the highest standard is ever before him. Whatever method promises the most lasting benefit he pursues without regard to time, money, or personal convenience. Many men fill teeth with amalgum, and preach the great advantage of using this material in preference to gold, who adopt such a course from laziness, and they write their articles to quiet a troublesome conscience, like the coward in the dark, who held one of his hands with the other trying to believe that he was not alone. Such a man is not truly professional.

The true professional man, then, is that man who is especially adapted to all the demands of his calling, both moral and mental. He has ever prominent in his mind the best interests of his patient, of his fellow practitioners, and of his profession which, by every act, he endeavors to lift to a higher plane in the esteem of the community. He conducts himself at all time so that his patrons place themselves, their wives and daughters, in his care with confidence in his integrity, and faith in his skill.

In New York City there resides one dentist who represents the highest type of the professional man.

The Quack Professional Man.

Among those who claim to be professional men will be found men who are professional in varying degree, until at the opposite extreme we find the quack professional. The quack professional, is like the crow who daubed himself with white paint and flocked with the geese, that the farmer might not suspect that he had one eye on the growing corn. This man is in dentistry for what there is in it. He poses with the professional men because perhaps by education and social position he naturally desires a clientele among the higher classes. He has no wish to work for the poor. It is the purse of the millionaire which is his constant aim. Such a man recently told a young man: "You cannot afford to have your teeth put in order." In desperation the young man sought advice elsewhere and cheerfully paid two hundred dollars to the gentleman who saved his teeth. Another boasted in a dental society meeting that he was "Not in dentistry for the good of his health," and the applause which greeted the remark proved that there were many present who had no very high estimate of professional rectitude.

While posing as a true professional man, the quack professional is his direct opposite in the matter of advertising. He does not advertise in the public prints. He is too shrewd for that. He knows the Code, and is very careful never to overstep the bounds. But one may advertise in many ways, not specially interdicted by the Code of Ethics. This man, unlike the true professional, is always *bragging*. He never loses an opportunity to explain how much greater he is than his fellows; how much more skilful; how many discoveries he has made; how many methods devised; how many instruments invented; and in short how very much indebted to him is all the rest of the dental world.

He also understands how to use printer's ink. He gets printed advertisements without paying for them. The chief object of advertising is to increase business. Consequently any use of the printer's art which accomplishes this end is advertising, however cleverly concealed. Indeed in these days, when advertising has grown to be a special study, the concealment of the advertisement is supposed to be the highest art. So our quack professional, our crow flocking with the geese who do not observe the black feathers beneath the white coat of paint, usually pursues some specialty, or pretends to do so; generally he practices everything, "from fillings to false teeth," but announces that he is especially successful in one line or practice. He writes many learned theses, some of which may be actually valuable additions to science, which fact adds to rather than detracts from their value as advertisements. His paper is usually read before a dental society, at which the author has a fine opportunity to pose as the special disciple of the methods advocated; next it appears in the most widely read journal. Would it not seem that this is sufficient? It is not, as viewed from the standpoint of the quack professional. He is not yet sure that it has reached those places where it will do the most good; therefore he orders one or two thousand reprints, and these are industriously distributed over that field from which he garners his corn. Of course it is not intended here to state that all men who distribute reprints, are of this class. Many do this, as they do other work, without thought of self. But there is a little sign by which the pamphlet of the quack professional can always be detected. At the end of the last page (if not on the first page of the cover) appears his office address. He is not willing that the reader should have any difficulty in finding him. When next you receive a reprint, bearing this little ear mark, think of the pamphlet as white paint and look for the crow.

THE PROFESSIONAL QUACK.

The professional quack is a miserable sort of fellow. He takes a notion that he would like to be a dentist. He has little or no education, but in these days that is no obstacle, providing he has a couple of hundred dollars. Any dental college in the United States will accept him as a student (*vide* proceedings National Association of Dental Faculties). He worries along through college to the examination period, and this he passes, because he wears long white cuffs, and knows how to write a fine legible hand with a well pointed pencil. So he gets through and is awarded a diploma. He does not send that pair of cuffs to the laundry, but uses them at a State Board examination which he passes with the same facility, and with the same lack of knowledge as when going through college. Thus he obtains his license. The college and the State Board have done all that they could for him ; they have launched him. But thrown upon his own resources he finds that he has none. So one day his room rent is due, and his lunch ticket is punched full of holes, and if he ever heard any lecture on the subject of upholding the dignity of his profession, or if he ever made any promise to do so, he forgets it all. He hires himself to a quack and becomes one of the "professors" in a "Cash Dental Parlor." Poor devil, is it his fault? Of course he ought to have taken a position in a carpenter shop, if he had any mechanical skill or perhaps in a planing mill or machine shop. But his little leaning toward mechanics made him imagine himself fitted for dentistry, and when he applied for admission into college *the professors did not undeceive him.* Perhaps a college which only accepted high grade, well educated, refined men as students, would not declare large dividends to its stockholders, but what a work its graduates would do in the world!

Of professional quacks (who, mind you, are only quacks until they get a start), there are hundreds in New York, and thousands about the country.

THE TRUE QUACKS.

The simon pure quack, when you come to know him, may not be half a bad fellow. Of course he is not a professional man ; but then he does not pretend that he is. All he asks is permission to do business in his own way. And strangely enough, the very laws which have been passed to elevate the profession (what a pleasant phrase that is as it rolls off the tongue) and presumably to suppress quackery, have had exactly the reverse effect. The quack is freer to go and come to-day, than your most cultured professional man. Suppose we prove that? At the present moment an old practitioner is intending to leave the north because his health demands a warmer climate. He probably will settle in Texas, *if he can remember enough of what he learned at college to pass the Texas Board.* He has a chance to dispose of his practice to a widely-known dentist in New England. *It all depends upon the success of the latter with the New York State Board.* Thus the real professional men are hampered, or else confined to practice in one State. How with Mr. Quack? In January he opens a place of business in New York. In February he starts a branch in Philadelphia. In March he opens another in Boston, and in May he begins business in Chicago. He passes *none* of the State Board examinations. Why? *Because he is not practicing dentistry, he is only doing business.* His staff of operators are the professional quacks, the poor devils whom the colleges have turned out as dentists, and who have been licensed by the State Boards. He can find dozens of such men in every large city. Consequently his sphere of action is limited only by his capacity for managing a concern with many branches. In short, the quack is merely a man of business, taking advantage of the opportunity which the wise men in the dental ranks have afforded them by enacting laws, which enable them to run shops, in which all the operators have been declared legally qualified. He may not be a dentist at all.

Of this class there are hundreds—and more start in business every year.—DR. OTTOLENGUI, *Editorial Items of Interest.*

WHY do the advertising dentists commonly adopt some such name as the "New York Dental Parlors?" This query suggests a line of thought replete with possibilities. In these days of civilization medical attendance of the highest class is afforded to the poor. Hospitals exist in all communities which reach the dignity of being classed among the cities. In metropolitan centers hospitals and infirmaries are numerous, and the medical men who give their services are usually the most skilled practitioners in the communities. These facts are tacitly admitted and are well known to laymen, and especially to those who can afford to pay high fees for service. The highest praise which could be given to any physician reached my ears yesterday. An Irish woman pleaded for assistance in paying her rent, explaining that her husband was in the hospital having his eyes attended. "And do you know Doctor X.?" asked she. "Indade, now, he's the foine jintilman. Do ye know, he attinded my old man with the same tinderness as if we were quality folks, payin twinty dollars an hour."

THAT the common people have come to know that the highest skill is obtainable in institutions, explains why advertising dentists assume the names in common use. It is with the intention to deceive. It is meant that the patients should believe that their places are similar to medical hospitals. The truth of this statement is becoming more patent every day, as the unscrupulous advertisers grow bolder in making their announcements in the public prints. In substance (being quoted from memory), here is an advertisement which occupied half a column of large type in one of our Sunday papers during the summer.

"OUR establishment is now admitted to be the most scientifically equipped in this city. We are at last able to announce that every department is under the direct supervision of a professor of dentistry making a specialty of his particular work. Prof. A. in charge of filling teeth with gold. Prof. B. in charge of filling with other materials. Prof. C. in charge of crown work. Prof. D. in charge of bridge work. Prof. E., artificial teeth. Prof. F. regulating (or straightening) teeth; and Prof. G., *late dean of the faculty of the Eureka Dental Association*, now superintendent and dean of our faculty, and oral surgeon of our institution."

Could anything be less disguised? Could any fraud be more audaciously announced?

But New York City is not alone the base of operation for this class of charlatans. Here are three advertisements clipped from the *Pittsburg Post:*

"For forty years the colleges of Philadelphia and New York have cared for the teeth of thousands. The same opportunity is offered you at the Pittsburg Dental College, 711 Penn Ave."

"Personal. First ten days of October special rates on all dental work at Pittsburg Dental College, 711 Penn Ave."

"Wanted. You to bring this with you and secure ten per cent. discount on dental work done at Pittsburg Dental College, 711 Penn Ave."

No such college appears in the list of the National Association of Dental Faculties, nor in that of the National Association of Dental Examiners. Is this a firm of advertising dentists?

THE following clipping has been going the rounds of the press of the West, and is a fair sample of "dentistry as she is taught" in the public prints:

"The progress in the art of dentistry has been greater than is generally known," said J. E. Lamb, of Boston, to a St. Louis *Globe-Democrat* man. "You can see from the swollen condition of my right jaw that I am suffering the torments of a throbing, thumping toothache, and, though I was advised by my dentist at Boston not to have my tooth pulled, I got up this morning from a sleepless night, thoroughly desperate and determined to have the unruly member plucked out. But when I applied to one of the most eminent students of St. Louis to perform the operation, he, too, after examination, advised me not to have it taken out.

When he learned that I was nearly fifty years old, he told me that I would have to suffer only two or three days more and the nerve would die of its suffering, my pain would entirely cease, and I would have my tooth preserved intact. The discovery of the death of tooth-nerves with advancing age is only two or three years old, but in that time millions of teeth have been saved. Formerly when a man with the toothache went to the dentist's office it meant either that the tooth was unceremoniously jerked out root and branch, or the sufferer was subjected to a long and painful operation of plugging. The better class of dentists have ceased nearly entirely to pull the teeth of men and women nearing their climacteric, as they know that the aches are but the last expiring efforts of the nerves to perform their functions. A curious fact in connection with this kind of toothache is that cold water, instead of intensifying the pain as it usually does, actually soothes it. Another important advance in dentistry is the method of completely sawing a tooth in two and joining the pieces together with a small gold screw. When a decayed speck or streak makes its appearance in a molar now the dentist who knows his business will neither pull the tooth out and substitute for it one of its own make nor fill the hollow with gold to preserve it, but he artfully saws the top of the tooth off close to the gums, and after thoroughly scraping and cleansing the decaying part, welds the two pieces together as firm as before the operation was done."

The above is forwarded by Dr. Wm. G. Ashton, of Milbank, S.D., and with it he sends a letter in which he says : "An editorial friend of mine seemed inclined to doubt my knowledge of recent improvements in my profession because I labeled the enclosed article 'nonsense.' Possibly we are to blame, inasmuch as very few dentists dare to appear in the columns of a newspaper as educators of the public, but leave that important field to the quacks. I would like to learn the name of that dentist in Boston, and of the eminent student in St. Louis who advocate these ideas. To the dentist, of course, this article appears to be rubbish, but to the public it is quite sensible. Cannot a plan be devised whereby the ignorant may be taught enough so that they may be able to discriminate between capable dentists and quacks ? This question has been too long ignored by our profession ; it should be seriously considered at our State and National meetings."—*Editorial in Items of Interest.*

ANTISEPTICS AND GERMICIDES IN DENTISTRY.*

By G. S. Martin, D.D.S., L.D.S., Toronto Junction, Ont.

It has been said by some one that it is therapeutics that makes dentistry a profession. In no other branch of therapeutics is the dentist so interested as in that given as the subject of this essay: "Antiseptics and Germicides." These terms are commonly used without any distinction being made between them, even writers in our journals and text-books failing often to make any difference.

An antiseptic, as I understand the term, is an agent having the property of preserving organic matter from fermentative changes. A germicide, on the other hand, is an agent that destroys micro-organisms or disease germs. For the most part dentists use germicidal medicaments very much oftener than they do antiseptic, because it is their province to deal with pathological conditions. When a practitioner talks of introducing an antiseptic into an abscess or a putrescent pulp, he generally means a germicide. When he bathes his instruments in a solution it is for the purpose of destroying any lurking germs of disease; and when he cleanses his cuspidore it should be with a germicidal disinfectant. This careless way of speaking is all too common among members of our profession and is very much to be deplored.

In a consideration of the agents at our command I would place first on the list, soap and water, being convinced that clean hands, towel, clothes and instruments are the first essentials to aseptic dentistry. The dentist who neglects cleanliness in his personal habits is not likely to value highly the more specific antiseptics, or to obtain desired results when he does use them. The observing patient is not likely to give a dentist credit for aseptic operations whose finger nails are not even mechanically clean. Dr. Taft has said that a thorough sterilization of instruments may be accomplished by the use of soap and water.

Heat is also one of the most useful of germicides, as, for example, in the cleansing of instruments by a bath in boiling water or oil.

Looking at the list of drugs which are available as antiseptics and germicides, we are reminded of the words of the wise king of Israel, regarding the making of books, "there is no end." Probably no other problem so absorbs the best thought of our profession as this one, involving, as it does, the treatment of alveolar abscess, root-canals, pyorrhœa, etc., the greatest trials of a dentist's life. Almost every journal we pick up describes some new or old preparation claimed by some enthusiast to be the ideal antiseptic. A recent writer on pyorrhœa alveolaris counted, if I remember rightly, something over one hundred different remedies for that bugbear of dentistry.

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* Awarded fourth prize ($40.00) in "Borolyptol" Prize Competition.

In a paper so limited as this, it will be necessary to apply the principle of exclusion to arrive definitely at the drugs we consider permissible. An ideal antiseptic or germicide should not be escarotic, coagulant, toxic or odorous ; should not stain the tissues to which it is applied, and should be possessed of the greatest possible germ destroying power.

On consideration, in the light of these specifications, a great many of the oldtime favorites will be found wanting in one or more points. For example, such drugs as iodoform and creosote, with their terribly persistent odors are scarcely to be tolerated in a modern dental office. The operating room possesses terrors enough for the delicately organized patient, without the odor of such drugs.

Some of these otherwise desirable medicaments are to be avoided on account of their tendency to stain the tissues ; as, for example, iodine or oil of cinnamon in the canal of a prominent tooth will cause a stain very awkward to deal with.

While the question of coagulants and non-coagulants has been a much vexed one during the past year, I am inclined to believe that these agents should preferably be non-coagulant.

Carbolic acid is, perhaps, one of the most common drugs to be found in the average dental office. Pure, it is reliable when applied to an ulcerated surface, or in a cavity before filling a tooth of poor quality. Diluted with water or glycerine, it is an efficient wash in cases of fetid breath from any local cause, such as after extensive extraction. Used one part in twenty of water, it is a reliable bath for instruments. The main objections to its use in the mouth are its odor and its caustic action. The odor may be disguised by the use of oil of cloves.

Carbolic acid, 51 parts, combined with camphor gum, 49 parts, by rubbing in a mortar will give campho-phenique, a remedy which stands to-day one of the most useful in the dentist's cabinet. It is one of the best dressings for root-canals, abscesses, etc., and will prevent soreness of separating teeth with cotton. In fact, it has so many uses as to call forth from Professor Flagg, of Philadelphia, the statement that it is "the most remarkable medicament which has ever been offered in connection with dental therapeutics."

Boric acid is an antiseptic possessing very great merit in diseased conditions of the mucous membrane, and after the extraction of a number of teeth. A combination of borax and boric acid, to which some one has given the name boracine, is not caustic, toxic, or irritating, and is tasteless and odorless. A 16 per cent. solution in water has proved excellent in treating abscess of the antrum.

The old-time favorite creosote has, in my practice, given place to less pungent drugs. The only place I ever use it is in combination with tannic acid in cases where I cannot remove all the fibres of a pulp, and even here guiacol is to be preferred.

The essential oils are valuable where stronger and more irritating agents are not necessary, and because their action is more enduring than watery forms of antiseptics. The most commonly used are cloves, cajeput, cinnamon, eucalyptol and wintergreen.

Bichlorid of mercury is, in spite of the sneers of the men who call it "bed-bug poison," still, perhaps, without a peer as a germicide. The offensive smell may be overcome by the use of a little rosewater. Use 1 part in 1,000 parts of water; it is the best bath for instruments that can be used. Dr. W. D. Miller, after his experiments, placed it at two hundred times stronger than pure carbolic acid, and advises its use even in 2 per cent. solution in cavities before filling. Combined with peroxide of hydrogen its use is indicated in abscess and pyorrhœa. The objections urged against the bichlorid are its poisonous nature, its smell and its tendency to change chemically. The dilute form in which it is used should not, however, result in any harm, and if prepared with ammonia chloride a solution may be made at any time required.

Thymol is a favorite substitute for creosote and carbolic acid, having, according to most authorities, equal power as an antiseptic without the unpleasant smell. Combined with glycerol it makes a most effective treatment for putrescent conditions of pulps or in any suppurating condition found in the mouth.

One of the most valuable remedies in dental medicine is hydrogen peroxid. Apart from any chemical action on diseased tissues, its purely mechanical services in cleansing by effervesence in contact with pus is of great value to the dentist. Professor Miller places it next to bichlorid in the list of antiseptics. One great point in its favor is the fact that it may be used without fear, as it is harmless to healthy tissues. It should not be injected into an abscess cavity from which there is not plenty of room for the escape of the gases evolved.

Lately, in the treatment of putrescent conditions I have pinned my faith to peroxide of sodium. Dr. Kirk says of this article: "Sodium peroxid is the chemical analogy of the well-known hydrogen peroxid, with several advantages. It is a white solid, strongly alkaline and caustic. It is easily maintained by keeping it from the air, and the solution may be made at any time. It contains thirteen times as much available oxygen as the H_2O of commerce, which can be prepared from it for immediate use by adding to it any dilute acid in proper proportion.

It is, of course, impossible to do more than touch briefly on these agents, and I have selected only those which I use daily in my practice, wishing to make my paper as practical as possible.

Reviews.

The Canadian Magazine and Massey's Magazine combined. January, 1898. Vol. X. Ontario Publishing Company, Toronto. $2.50 per annum.

We have reason as a people to be proud of the success of this monthly Canadian periodical. "It is shameful," said an ancient philosopher, "to be ignorant of one's own country," and such journals as the *Canadian Magazine* alone can make up our deficiencies. Every man, woman and child in Canada has been touched with the sense of broader national importance within the last year. From a feeling of colonial isolation, we have grasped the substantial pride of Imperial Canadianism. Our right to exist on this continent has been won too dearly not to be prized. A Canadian, whether he be of French or of English origin, is to-day the peer of any citizen of the three kingdoms. These and many more such wholesome and hopeful thoughts inspire the pages of the *Canadian Magazine.* Our first duty lies to our own literature. We should be ashamed to have foreign journals in our rooms to the exclusion of our own.

The Canadian Magazine. Monthly. All Canadian dentists owe a duty to the only Dental Journal we possess; but all Canadians owe one to the most successful literary journal we have ever possessed; a journal of more than transient interest, as it embraces material of permanent value. Last year's volume was a great credit to the publishers. The special Christmas number was very attractive, containing articles by Charles Gordon Rogers, Gilbert Parker, Louis Frechette, Dr. Bourinot, Prof. Goldwin Smith, Nicholas Flood Davin, Dr. Parker, etc. The Journal is eminently Canadian, and richly merits the success it has achieved.

APPLETONS' POPULAR SCIENCE MONTHLY FOR JANUARY, 1898.—An important article by George M. Sternberg, Surgeon-General of the United States army, on the "Causes and Distribution of Infectious Disease," occupies the first place in *Appletons' Popular Science Monthly*, for January. Dr. Sternberg, among much other interesting data, gives a brief history of the more serious epidemics of the century. Professor Ripley's twelfth chapter takes up the Aryan "Question," and gives us a general view of its present status. "The King of the Woods," by Norman Robinson, describes that versatile songster, the mocking-bird, as he appears in his native forests. "Science and Morals," by M. P. E. Berthelot, the eminent French chemist, discusses the relations between science, morals and religion. "Feet and Hands," by M. Bernard, is the first instalment of a popular study in comparative anatomy, and gives a very good example of one of the processes of evolution, which in this case has resulted in a wide differentiation of two originally similar structures. Professor His's memorial address on "Carl Ludwig and Carl Thiersch," delivered at the University of Leipzic, will interest all readers with the least scientific tinge, the lives and work of both these men being intimately bound up with the history of physiology and medicine during the past fifty years. The methods which make "Double Taxation" possible are discussed by the Hon. David A. Wells in his fourteenth chapter. The *situs* of personal property and the origin and nature of property are his two chief sub-headings. Under the title "Aborigines of the West Indies," Lady Edith Blake describes the natives of these islands and their curious customs as they existed at the time of the landing of Columbus. Arthur Houghton Hyde discusses the immigration question under the title "The Foreign Element in our Civilization." "The Caingua of Paraguay," by Dr. Machon, describes a visit to an isolated and little-known district of South America. Francis Lieber, the great American publicist, is the subject of this month's sketch. The titles in the Editor's Table are: "Education in Bonds," "The Nature of Science," and "Business Through Politics." New York: D. Appleton & Co. Fifty cents a number; $5 a year.

Question Drawer.

Edited by DR. R. E. SPARKS, M.D., D.D.S., L.D.S., Kingston, Ont.

QUESTIONS.

Q. 42.—In articulating full upper and lower sets on extremely absorbed alveolar ridges, is there any advantage in elongating the molars?

Q. 43.—To what membranes was the term "persistent" applied?

Q. 44.—How may we prevent formation of black oxide on flasks in vulcanizer?

Q. 45.—What are the dangers of cocaine?

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

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All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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MADE IN GERMANY.

Competition, it has been said, is the life of trade. It would be quite as true as a proverb, if the "f" was left out of the "life." Competition in trade all over the world has destroyed confidence in the genuineness of production, so far as the mechanical arts are concerned. Not only are many of the things themselves made in haste, but inferior materials as well inferior workmanship prevail, and the one insane cry of producer and purchaser is the bane of "cheapness." We know how it is in our own professional experience. Many dentists would discard vulcanite, cheap teeth, etc., were it possible to carry out that much-talked-of-scheme of "educating the public," a scheme which has many parents but no deliverer. Competition does not now mean fair and honorable rivalry. It is associated with everything that is dishonest in human conception and action, and men who prefer to do what is right, are simply driven into all sorts of ingenious devices to get the upper hand in the trades, manufactures and the professions. It has even crept into the practice and politics of law and medicine, and the shyster lawyer and the quack doctor are types of the class which exist more largely in dentistry, because of our closer connection with purely mechanical methods.

One of the vilest outcomes of this trade rivalry is the attempt to flood the Canadian market with the trashy tinsel of Germany. The Vaterland cannot compete with the best productions of the British and American markets, simply because trash is the main crop of cheapened labor, and there are limitations beyond which such competition cannot go. But in the matter of medical and dental instruments, operative and mechanical, by close imitation of design, fraudulent change in name or trade mark, purchasers are now apt to find themselves very badly swindled. Recently we saw a lot of German surgical instruments which had been unwittingly purchased. They had been discarded as unreliable in quality of steel and temper, and replaced by American and English substitutes. Cheapness was their only qualification, and even this was costly. We have known of cases where forceps snapped like glass, and chisels, etc., supposed to stand the strain of cutting enamel, broke in the mouth, in several instances to the injury of the patient. There is no excuse, save that of greed, for either impostor or practitioner to pass by the productions of American and British manufacturers. There are instruments on our market to-day of unknown manufacture; instruments, too, without the name of the manufacturer, and, in fact, instruments with the full-blown name of German manufacturers, which are, like all cheapened goods of the kind, a delusion and a snare. The reputation which our leading American and British manufacturers of everything in the medical and dental lines still retain, in face of these discreditable cheapened wares, ought surely to appeal to our common sense.

SOME FRANK ADVICE TO US.

One of your correspondents talks to us like a father, and gives us a lot of very good advice about our policy towards quacks and quack imitators, and thinks that we should advocate "more of the 'good will among men' principle, instead of this compelling others *by law* to do our way. Our circumstances are not all alike, and what is best for one is not always best for another."

We take our friend's advice kindly, but if he would apply the principle of "good-will" to quacks who lie and deceive the public, why not to criminals at large? If we need the penalties of the law for rascals in general, why not be rascals in particular? Honesty is best for everybody. There are no circumstances which can justify a dentist in deliberate fraud, and we have quack advertisers who are most outrageous frauds.

Our correspondent continues: "Let our dental students be encouraged to make themselves proficient in dentistry rather than *by law* compelling them to spend their time and money in Greek, Latin, French, German, etc. I can see no greater claim that these languages have on us as dentists than some seven or eight hundred others that might be named."

We think that this aspect of the matter has not only been well discussed, but finally settled beyond repeal. Our friend takes our frequent remarks about "cheap Jacks" as a personal insult. We have often drawn the line between a quack "cheap Jack" and a respectable dentist whose fees are low. A "cheap Jack" is a synonym for a quack first, and a cheap one afterwards. It is a stigma which has no sort of application to anyone who is not a quack. If our correspondent had any personal sympathy or affiliation with quacks and quackery we could understand his objections to our policy. But as we believe he has not, we do not quite understand him. The high-priced dentist may be as much a fraud as "cheap Jack." We are not so foolish as to assume that there should be a tariff as alterable as the laws of the Medes and Persians. As our correspondent says, "Owing to our circumstances and those of our people, we may not think it best to charge as large fees for dentistry as some of our brethren." That, too, is a principle accepted and practised by all honest dentists. It is not the size of the fee, but the pretence that just because the fee is low the services are equal or superior, that makes for dishonesty. If a man is conscientious he may be depended upon to be just to his patients and fair to himself. There is as much difference between a "cheap Jack" and an honest dentist who feels he must work cheaply, as there is between a paste diamond and a real gem. Our correspondent and all like him, have no reason at all to fit the cap of the quack to their own heads. They were not made for them ; all the same we feel under obligations to our friend for the frank opinions which gave us this opportuity to explain our position.

USE THE PRESS. HOW?

The press may be made a great factor to promote the education of the public in all matters relating to the mutual interests of the public and the profession. At present it is largely subservient to the several classes of practitioners who use it and make the public believe that they are much better, very much better, or a little better than their confreres, and the consequence is that this class, like the departmental stores, lead the public by the nose. There are intelligent people who easily see through these self-applauding advertisers, but the masses do not. Our association should use the press impersonally to educate the public.

PROFESSIONAL PESTS.

The orthographical and etymological cranks who busy themselves misspelling our language, and coining new words which express nothing new excepting the "newness" of their authors, might surely find a sedative to their conceited ignorance in the general resentment to their conclusions. The glaring errors of which these gentlemen have been convicted, seem to have no more effect than the exposure of the follies of the so-called "Christian Scientists," and they continue their idiomatic and orthographical fabrications with a glorious indefiniteness, which gives to their expressions the transparency and clearness of mud. An authoritative writer refers to the so-called reform that changes iodine to "iodin," iodide to "iodid," etc., and disapproves of the innovation. The termination "ine" should be retained for alkaloids as distinguishing them from principles, the names of which end in—in. We have been frequently amazed, if not amused, to discover the utter ignorance of the classical languages from which so much of our own have been derived, on the part of gentlemen who pose as authorities, and who tinker with our etymology, lay as well as scientific, with an arbitrary presumption as full of affectation as of ambiguity. The need for preciseness of expression and correct terms is keenly felt in our profession, but the reform must not be left to the Quixotic guessers, who think they are qualified to improve the speeches of Shakespeare and of science, by virtue of their ability to give us a jargon which is only intelligible to themselves. Our professional literature reveals the fact that we have many clear and correct writers; but, on the other hand, we have some prominent teachers who are free and independent orthographical and etymological democrats, who do not care a damper for any law and order not of their own conception in the construction of words. They may be terrible in terseness, or vapid in verbosity, but they are a confounded pest all the same, and should have their conceit and ignorance personally and publicly exposed. They make "ruin upon ruin, rout on rout, confusion worse confounded," and convey a sense of their personal vanity more than the desire to enlighten their readers. We have had quite too much of this fad. Let these parties expend their fantastic word-juggling in some sphere outside our special literature, and as scholars consent to leave to them the care of their teeth, let them leave to scholars the care of our professional language. When they aspire to reform our terms and technicalities, they succeed as well as a *chef* who would try to pass off sole leather for a fillet, and cultivate a taste among his patrons for a pudding of straw.

OUR ETHICAL POLICY.

We hope we may be absolved from any suspicion of egoism when we say that we believe the policy of this Journal, in its persistent advocacy of a high ethical standard, has done a great service to dentistry as a profession in Canada, which is neither fully known nor appreciated. It is impossible to legislate ethics in Parliament or the Provincial societies, so as to obtain assent to a fixed moral standard of professional life and action. It is only by the reiterated arguments and appeals which meet the eye in journalism that success can be achieved. Without this antidote to the poisonous customs of the quack, the profession would know much more of the quack-imitator.

The very large majority of us desire professional respect, and a social recognition equal to that enjoyed by practitioners of law and medicine. The fact that there are quack lawyers and physicians does not diminish the respect they secure, and no more should it in the case of dentistry. But we must be just as exacting in our ethics, and carefully avoid the promotion of any man who adopts, or who has only lately abandoned quack methods. The subterfuges of those who force their vulgar and lying advertisements in the press and in pamphlets, should be enough to place them outside the pale of ethical society. We do not admit professional gamblers within the sacred circle of our family ; we do not even tolerate the unclean cook in our kitchen, or the drunkard in our stables. We cannot, perhaps, stop the quackery, but we can very easily see that the quacks themselves and their imitators do not slip themselves into our colleges, our societies and our boards. A few years of wholesome ostracism should be the penalty, even for the most penitent. If this policy is enforced it may have the effect of making others hesitate before taking a step from which they cannot recede stainless There is no safe middle course or compromise.

SHALL THE DENTIST ADVERTISE?

A correspondent in the *Items of Interest* says some good things in a recent article:

"The man who is seeking the road to wealth is misdirected when he chooses the dental profession. The average dentist lives well, spends freely, dies poor and in debt."

"Keep out of the theatre programmes, for they are almost exclusively in the hands of the quacks, and for this reason the reputable man, feeling that there must be a dividing line between himself and the incompetent, refuses to advertise at all. I claim that if one city paper, of high standing, should make an effort to have a professional directory of medical and dental men, excluding the quacks and incompetents, society members exclusively of accepted standing, each with name and address, it would be a good thing for the paper, the public and the profession."

"Shall the man who has conducted himself in an unprofessional manner join the societies on an equal footing with the young man who is just entering practice and trying to conduct himself in strict accord with the code of ethics? Will he not also conclude to advertise, and when he has secured a practice become a society member? If we expect him to follow the straight and narrow path, the reward of improper conduct should not be the too easy admittance in the society."

We must not censure the custom of the profession before we were organized and recognized as a "profession." Many of our best men then advertised in a way that to-day is considered unethical. The times then were out of joint. We are professionally better now than then, and should behave better.

A MORAL LACTOMETER.

A merchant in a western town of Ontario made the jocular remark to his clergyman, that the lactometer had made more honest men among the farmers than all the parsons put together. The clergyman, however, got the best of it by replying, that while the lactometer had made the farmers honest as to the purity of milk, it had no power to take the dishonest intention out of their hearts, and that if they wanted to cheat they would do it in another direction. We may fitly apply this to the quacks in our profession, who once perambulated the country in a mountebank fashion, but who now practise imposture and lying in a less ostentatious manner, because of the fear of the law which has made their public charlatanism illegal. Here and there, in Ontario and Quebec especially, the farmers have a humbug tramping from farm to farm with a set of filthy tools in his bag, pulling teeth wholesale that could be saved, and palming off wretched rubbish as first-class work, and diligently deforming the honest skill of superior men, who have not his experience in knavery. No doubt there are farmers just as upright as the most honorable merchant, and yet their honesty is no protection from the grovelling dental tramp, who peddles his "cheap teeth" from farm to farm, and loads up his victims with infection and falsehood. In the interest of farmers and their families it should be the duty of the local country press to protect respectable local dentists as well as the people from these peddling tramps. The fact that they are licentiates is no proof whatever of their competence, as the parties to whom they refer never received any professional education excepting what they picked up in the laboratories of tutors of their own kind. It is not very complimentary to the intelligence of farmers, that while many of them would not trust a sick hog or cow to the care of peddling veterinarians, who acquired their veterinary knowledge in the same way, yet they will expose their families to imposture and to infection from dirty instruments, in the hands of the ignorant dental tramp. If some one could invent a moral lactometer, these tramps would be forced to their more suitable occupation as hostlers.

STUDENTS PRACTISING DENTISTRY.

There should be a severe example made in the colleges of the first student caught practising for fee or reward on his own account. Such conduct in medicine or law is simply impossible, but in dentistry it has become a very general custom. Several cases have come under our own notice the last month, where second-year students had made full upper sets for five dollars "on the quiet," and for parties who were quite well able to patronize regular licentiates. In fact, the custom has become such a fad that the rooms of some of these students in boarding-houses are unlicensed offices on a small scale, and a system of tooting for patients has even extended on the sly to the infirmary patients.

It is generally this class of students who degrade the profession by cheap fees when they get into regular practice. It is a fact, too, that we have some very indigent young men in the ranks. Their poverty is no crime, but unfortunately they imagine it ought to justify them in breaches of law. The common thief may as consistently use the same argument.

EDITORIAL NOTES.

TRY exol hypodermically for painless extraction. It is safe and successful.

TO the many contributors to last volume we return our sincere thanks for their co-operation.

To the secretaries of the societies who helped us, ditto. To those who did not, and who should be in duty bound to do so, we wish them each a friendly reform—or an official successor.

AFTER extracting abscessed teeth always syringe the sockets with hot water and an antiseptic. Especially is this wise in the lower jaw, where by gravitation pus may remain in a socket after extraction.

OUR bright contemporary, the *Dental Practitioner and Advertiser*, has added to it *The Investigator*, the official organ of the Alumni Association, Dental Department, University of Buffalo. It is a good idea.

TAKE care of the crowns of teeth and the roots will generally take care of themselves. There are exceptions of course, but so there are to the old saying, that if you take care of the pence the pounds will take care of themselves.

STILL WANTED.—Some common-sense fool, who knows enough to simplify the fearfully and wonderfully made modern head-rest. Any idiot ought to be able to do it if he had time to sit down and think it over in an old-fashioned arm-chair.

EXTENSIVE Dental practice for sale immediately in a good manufacturing town in Western Ontario. Apply,

Box 24,
DOMINION DENTAL JOURNAL.

WE might add to the many tributes to the memory of the late Dr. Thos. W. Evans, a personal reminiscence of our own. In 1875 we visited Paris, and were handsomely entertained by the doctor, and had the special pleasure of finding in his office, as an operative assistant, the late Dr. Ed. Lefaivre, formerly of St. Johns, Que., to whom we had given a note of introduction to Dr. Evans the previous year. Dr. Lefaivre was one of the members of the Quebec Examining Board, and on account of ill-health went to France. He died in Marseilles. The personal kindness of Dr. Evans to a Canadian confrere, whose ill-health made him in a measure inefficient, has never been forgotten. The distinguished doctor always had the big open heart of the true Jonathan.

PERIODICALLY we have pitched into the stupid, modern head-"rests" of dental chairs. There is not one in the market as comfortable or convenient as an old pillow thrown over the back of an old chair. We may say of them what Dr. Johnson said of poetry, "ingenious nonsense." They are constructed to bewilder both patient and practitioner, and their fancy movements are mere toys, pretty to look at, but of little or no practical value. Between the head-rest and the back-rest there is an open space, which is exceedingly awkward, and which we would consider an absurdity if used in any ordinary chair in which one wanted to enjoy a comfortable forty winks. There is a hypnotic influence in a perfectly comfortable dental chair. The modern head-rest ought to be very much simplified, and something done to avoid the crick which one gets in the neck on account of the space between it and the back-rest. The editor of the *American Dental Weekly* referred lately to a complaint of this kind made by a lady patient, who actually brought her own pillow for the purpose. All the stiff-necked sufferers are not up North.

IF anyone from Halifax to Hong-Kong wants to know anything about dental matters in Canada, he is pretty certain to write to the editor of this Journal. Where there are a number of journals, as in the United States, this infliction is distributed, but as the DOMINION DENTAL JOURNAL is at present sufficient from wants, it gets the concentrated mass to itself. It comes from all parts of the world, in various languages. A large amount comes from valued friends, with kind words, whose fraternal good-will we can never repay. But it comes, too, from men of no repute who, having exhausted the field elsewhere, seek for new worlds to quack in ; from scores of the " sample-copy " people. All sorts of advice given and asked ; offers of the services of self-satisfied young graduates, who do not know how very much less they know now than they will discover twenty years hence ; Bohemians who are never at rest ; people who want us to send them the list of dentists in Canada, irresponsible depots who wish to avoid the legitimate means of advertising provided by the publisher of this Journal. In some way we have always replied to every letter, but if this thing increases much more we will need a private secretary and a private bank.

FROM the *New York Medical Journal* (D. Appleton & Co.) we condense the following portion of a report of the United States Bureau of Education : " The students in regular medical schools numbered, in 1893-94, 17,601, an increase of sixty-six per cent. in ten years ; homœopathic, 1,666, an increase of 31.5 per cent.; eclectic students, 803, an increase of 4.7 per cent. If this increase in medical students continues the question will soon be raised, What are they all to do? Where can so many find places to practice? It is no wonder medical men complain of hard times when competition must be so keen. It is hard to understand how 8,000 new doctors every year can earn a living." Referring to the ratio of medical students to population, the report shows that it is about twice in the United States what it is in Europe. United

States and Canada, total number medical students in attendance in 1894, 20,800; population, 70,000,000. In Great Britain and Ireland the proportions are 1 medical student to 5.286 of population; in United States, 1 to 3, 365. The report proceeds to admit that medicine will be still more overcrowded, and it expresses no surprise. "What profession or trade is there which is not crowded?" "The common schools and public high schools are educating large numbers of young men who have aspirations to the higher callings."

Obituary.

DEATH OF DR. GEORGE DAVIS,. LONDON, ONT.

One of our correspondents in London, whose address and whose manuscript has been mislaid, sent us an interesting notice of the death of Dr. Davis. We have tried in vain so far to secure the material necessary to do justice to the memory of Dr. Davis, and would feel obliged to any of our readers who can assist us.

DR. A. W. HYNDMAN, SHERBROOKE, QUE.

In the death of Dr. Hyndman, which occurred last month, the profession in Quebec Province, lost one of its most esteemed and successful members. By close application and the most honorable conduct, he built up one of the best practices in the Province, and, in fact, overworked himself to such a degree, that he was obliged to spend several months in the south, and only returned a short time ago, very much improved. Last month an attack of pneumonia occurred from which he did not recover. It was our pleasure to know the Doctor from the time when he was a student with his uncle the late Dr. Dowlin, and personally and officially, in his home and in his position on the Board of Examiners, his geniality made him many friends. He was upright and conscientious in his daily walk and conversation, and enjoyed a very happy home life and the respect of the general community, as well as of his confreres.

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Original Communications.

INSTRUMENT NOMENCLATURE WITH REFERENCE TO INSTRUMENTATION.*

By G. V. BLACK, M.D., D.D.S., Sc.D., Chicago, Ill.

Read before the National School of Dental Technics, Annual Meeting of 1897.

INTRODUCTION.

[We have much pleasure in complying with the request of the National School of Dental Technics, for the publication of the following paper by Dr. Black.—ED.]

The want of some recognized scheme of Nomenclature and Classification of Dental Operating Instruments that will individualize the instruments of the several orders and classes is a great bar to progress in teaching instrumentation. This is apparently severely felt by all who labor for exactness in their operations, or endeavor to express the manner of their performance and to speak of the instruments used. The teacher has no means of telling his pupils just what particular instrument he would use in performing a specific act in excavating a given cavity or preparing a margin. The only means of individualizing excavators and pluggers, the instruments which present the most important variations, has been the manufacturer's number. These numbers have not been used by the profession, except occasionally for ordering instruments from catalogues. An extended study of these numbers develops the following facts: When an instrument is designed that is thought to be a good pattern the manufacturer assigns it a number.

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*This paper as printed for reading before the National School of Dental Technics was copyrighted, because it was seen that a revision would be necessary, and it was not desirable that it should be generally published before such revision.

In this way hundreds of instruments are numbered without system. Finally, to rid himself of the multitude of instruments and numbers, the manufacturer collates those forms that sell best and throws out the rest. He then renumbers those retained, and enters them in the new catalogue. In this way instruments of similar pattern are for a time brought nearer together in the numbering. But the process of adding new numbers begins again and soon it becomes another confused mass. There has never been any system of numbering that indicated either the form or use of the individual instrument. It has been purely arbitrary. For this reason, the numbers have not been used by teachers, except for the one purpose of making lists from which the students should do their buying.

A dentist needs some means of indicating precisely the forms of the instruments used in the operations he endeavors to describe, and especially is this badly needed in school work. So long as the teacher has no means of accurately designating the particular instrument he employs, so long will his manipulative teaching be vague and uncertain. The pupil will be unable to know just what is meant, and any description of the manner of using individual instruments will be confusing and without force.

Not only this, but the confusion gives rise to an unnecessarily great multiplicity of instrument forms. We being unable to teach manipulation, the student fails to learn the range of valuable instrument forms, and the powers and capabilities of instruments, and is therefore continually seeking new forms, hoping to find that which will serve him better. This being done without accurate appreciation of mechanical laws, the vast majority of efforts are failures, which tend only to further confuse the manufacturer's numbers.

It should be regarded as a truism that the really capable instruments are strictly limited in present modes of operating by definite laws of usefulness that no man can put aside, and that the valuable forms continue in our cases year after year.

Special instruments for special purposes there are, and many of them fitted only for individual idiosyncrasies in operating. Radically new instruments of value in the line of excavators and pluggers come forward now-a-days only as modes of operating are so changed as to require new forms This kind of growth will continue. That which is needed now in the line of excavators and pluggers is a strict classification of the useful forms and the development of a scheme of nomenclature for the individual designation of each form. The presentation of such a scheme to the pupil will place before his mind the range of possible forms from the mechanical standpoint, and will enable him to know quickly what has been produced and in a much fuller sense than heretofore to know what can be produced.

This failure to appreciate instrument forms and the special usefulness of each form gives rise to great confusion in operative procedures. The disagreement as to method among dentists is unnecessarily great, and when such a degree of confusion exists only a very few of the methods can be the best. We should be able to teach methods in our schools. Can we do so without the ability to designate accurately the means of carrying out the method? The carpenter would not buy an auger that had not been made to a definite formula. The carpenter's boy would be laughed at, if, when sent for a quarter-inch auger, he should bring a seven-eighths. Can we not appreciate the forms and sizes of our instruments as definitely?

What our students need in the beginning of school work is a close drill in the appreciation of the forms of cutting instruments and pluggers, such as will enable them to discover the peculiarities of each with exactness, as to width, length, and inclination of blades, and the proportions of the several parts. Also they should be instructed as to the possible variation of useful forms. Directly coupled with this, the student should be taught to record the forms for future reference; and, it would be well for him to acquire the skill to reproduce them from the record. If this be coupled with a careful drill in the uses and capabilities of instruments, an impression will be made on the mind, and a skill acquired by the hand that will be a great aid in the development of manipulative ability.

It is my object to develop the details of a scheme of instrument nomenclature and classification applicable to cutting instruments and pluggers, by the use of which the teacher can reach exactness in teaching instrumentation. This will be attained by first defining and arranging in an orderly way the words of instrument nomenclature that have been developed in the ordinary speech of the profession, by use of which groups of instruments may be definitely known; and then arranging a simple system of formulæ by which individual instruments of each group may be accurately designated.

It cannot be expected that this proposed scheme for the classification and study of instruments will be of special benefit to dentists now in practice. That is not its object. It is intended for school work only; but may in time spread to the general profession through the students who go out from our schools.

Another object of the scheme is to limit the number of forms of instruments employed, and to adopt a classified list for school work that shall be sufficient for all schools and not be cumbersome to any. This can be done by selecting a sufficient classified list to be used in teaching, and from which each school may select the particular instruments the students will be required to have. This particular feature of the scheme will be more fully developed later.

Or, instead of selecting a sufficient classified list for all schools to select from, each school may select its own classified list in accordance with a specified set of rules for the arrangement of instrument sets. A plan for doing this will be developed later, by which any classified set of instruments will be perfectly comprehended in the minutest detail from the written statement by any one familiar with the scheme of classification, and who has attained a working knowledge of any single set of instruments so classified. Also, such instrument sets may be accurately made by any skilful instrument maker without other guide than the written formulæ and the rules that will be developed in this paper.

This paper will be in two parts. The first part will consider and arrange the nomenclature heretofore developed, and the second part will be devoted to the consideration of formula names and the formation of instrument sets.

PART FIRST.*

INSTRUMENT NOMENCLATURE.

[Furnishing the Basis for School Instruction.]

In the development of any system of nomenclature, the basis should be the names that have arisen in the common speech of the profession. These names have a meaning, and, if we gain an understanding of this meaning, we will be able to classify the names in accordance with it, and in so doing present an orderly nomenclature. In doing this it is often necessary to choose between two or more names that have been applied to the same thing and occasionally to separate two items that have been called by the same name. In this way the uncertain nomenclature in vogue, developed at random in the first instance, is rendered orderly and definite. This is really done in instrument nomenclature, and without the introduction of any considerable number of new terms

NAMES OF PARTS OF INSTRUMENTS.

Cutting Instruments, or Excavators.—Each excavator is composed of a shaft which is used as a handle, a shank and a blade. Usually in excavators the shaft is perfectly straight and without variation in size. The *shank* begins with the first turned part and connects the shaft with the *blade* or working point. It usually tapers from its connection with the shaft to where the blade begins.

The *blade* is the part bearing a cutting edge. It may be said to begin at the angle which terminates the shank—the last one, if there be more than one angle—and ends in a cutting edge.

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*Some portions of this was given the National School of Dental Technics at Ashbury Park in 1895 by Dr. D. M. Cattell, but it is thought best to give it here complete.

Pluggers have no cutting edges and therefore no blades, as "A blade is the leaf-like portion of an instrument bearing the cutting edge." The shank of pluggers, therefore, extends to the working point, though they may have similar angles to the excavators. (We should have a specific name for that portion of the plugger corresponding with the blade of the excavator.)

Classification of Names of Operating Instruments.

Existing names of operating instruments may be divided into order names, sub-order names, class names and sub-class names (4).

An *Order name* is one designating such instruments as are used for a purpose so similar that groups have received a name indicating the purpose of their use, or answers to the question, "What for?"

The well defined order names are *excavators*, *pluggers*, *separators*, *scalers*, *finishing instruments* and *accessories*.

A *Sub-order name* is one designating the locality, position or manner of use, in such a way as to distinguish certain instruments from other members of the order, or answers the question, "Where, or how used."

A *Sub-order name* is often attached as a prefix to the order name, as *hand* plugger, *mallet* plugger, *push* scaler, *pull* scaler, etc. *Enamel Trimmer* is a sub-order of excavators. *Burs* belong both to Excavators and Finishing Instruments as sub-orders, as *cavity* bur, *finishing* bur. The word *Bur* is properly a class name—they have no order name.

A *Class name* is applied to a group of the members of an order and describes the point or immediate working part, as *hatchet* or *hoe*, descriptive of the blades of excavators, or the working point of pluggers, as *convex* plugger, *serrated* plugger, *smooth* plugger, etc.

A *Sub-class name* describes the angles and curves of the shank leading to the working point or blade, as *bayonet* plugger, *spiral* plugger, *contra angle* hatchet excavator.

In the common speech of the profession, these names have been habitually compounded. Sub-order names are prefixed to order names—as in mallet-plugger, hand-plugger, etc. Class names are prefixed to order names, as in *hatchet* excavator, *spoon* excavator, *hoe* excavator, etc. Also sub-class names may be prefixed to either order or class names, or all these joined, as in *contra angle hatchet excavator*, or in *bayonet plugger*.

In all these compoundings, the order name is last, indicating the use or purpose—the sub-order name prefixed, indicating how or where, while the class name is descriptive of the forms of the working point, and the sub-class name the form of the angles and curves of the shank leading to the point. It should be noted particularly that these terms are applied to groups of operating instruments. They specify the kind of instrument but do not individualize the instruments of the group. These may vary indefinitely in the widths, lengths and angles of blades. For these differences we will propose other terms.

RIGHTS AND LEFTS.

There is a distinct division in operating instruments, known as *Rights and Lefts.* Among excavators we have two forms of rights and lefts. The *beveled* rights and lefts and the *lateral cutting* rights and lefts, or, true double plane instruments. The beveled rights and lefts are hatchet forms made rights and lefts simply by the form of the bevel of the cutting edge. Most of the hatchet forms have bi-beveled edges, *i.e.*, the edge is formed by grinding equally from the two flat sides of the blade. The beveled rights and lefts are formed by making two hatchet forms alike, and then grinding the bevel all from one side on the one, and all from the other side of the blade on the other. The result is a pair of instruments, the one suitable for shaving down the buccal wall of a cavity, and the other suitable for shaving down the lingual wall. The cutting edges are upon opposite sides of the blades, making them rights and lefts. These are used mostly for cutting enamel in opening cavities, but may also be used very effectively in cutting dentin. Any of the hatchet excavators may be made in pairs and converted into beveled rights and lefts, but the general adoption of this, while producing excellent instruments, multiplies the number of instruments in the operating case to such a degree as to cause confusion. For this reason the formation of beveled rights and lefts should be very strictly limited to enamel instruments, or to special instruments for heavy cutting.

LATERAL CUTTING RIGHTS AND LEFTS.

True Double Plane Instruments.—The double plane, or intersecting plane rights and lefts are a totally different class of instruments, and are designed for lateral cutting, while the other forms, single plane instruments, are for direct cutting. If any of the single plane instruments be laid upon a table or any plane surface, in a certain position, it will readily be seen that all of the angles and curves, no matter how many, are in a single plane. If it is held before the eye, in a certain position, the instrument appears straight—such instruments are suited for direct cutting.

If we carefully examine the rights and lefts known as spoons or rapid excavators, it will be noted that each has an angle or curve that is not in the same plane with the principal angle or curve, but in a plane that intersects the plane of this principal angle at right angles. These we will call *double plane* instruments—they differ essentially from the single plane instruments in that they are specially suited for lateral cutting. They are always made in pairs.

They are first formed similarly to the hatchet excavators, but after the blade is formed the blade of one is curved to the right and the blade of the other is curved to the left. This important division of cutting instruments is confined mostly to what has become known as spoons. They are suited to scooping out masses of carious material. They are not of much value for cutting hard material. This form of rights and lefts is also used occasionally in pluggers.

Definitions of Class Names.

A *Class name* is one that describes the immediate working point of the instrument.

Class Names of Excavators.

Hatchet.—The shank has one or more angles or curves, the last length forming the blade, the edge of which is in the plane of the angle or angles.

Hoe.—The shank has one or more angles, the last length forming the blade, the edge of which is in a plane intersecting at right angles the plane of the angle or angles.

Spoon.—These are always made in pairs. They are first made in the form of hatchets and then the blade of the one is curved to the right and the blade of the other is curved to the left, then the cutting edge is ground to a semi-circle. This curve of the blade is in a plane that intersects the plane of the principal angle or angles at right angles, making the instruments true rights and lefts.

Discoids.—(Disc-like, circular.) The blade is circular in form, having a cutting edge extending around the whole periphery, except that portion by which it is joined to the shank. This circular blade is placed at more or less of an angle with the shaft.

Formerly this form was called a spoon, several forms being grouped under that name. Discoid blades are sometimes seen on double plane instruments of various forms.

Cleoids.—(Claw-like—in the form of a claw.) Sharp pointed blades in the form of a claw, with cutting edges on two sides of the blade.

Chisels.—Straight blades with cutting edge formed by beveling from one side. The blade is usually straight with the shaft, but may be slightly curved.

Binangle Chisel.—A chisel blade placed at a slight angle with the shaft in the hoe form. They are contra-angled.

Rotary cutting instruments will not be included in this list.

Sub-Class Names.

A *Sub-class* name is one applied to and descriptive of the angles and curves of the shank of an instrument which leads to the blade or working point.

Mon-Angle.—An instrument having one angle only leading to the working point as in pluggers, or forming the blades as in excavators. Mon-angles form a large majority of excavators. In the greater angles only the shorter blades can be successfully used as mon-angles, for the reason that when the blade is long its inclination carries its working point laterally so far from the central line of the shaft as to render the instrument liable to turn in the hand when the edge is forcibly applied. This renders the instrument unsteady and ineffective. To remedy this defect, all cutting instruments, in which the angle and length of blades will carry the cutting edge more than three millimeters from the line of the central axis of the shaft, should be contra-angled.

Contra Angle.—The shank of the instrument is first bent backward (from the direction of the cutting edge), and nearer the cutting edge another bend is made forward—this length forming the blade, the object being to form a long blade, the edge of which will be near the central line of the shaft.

Binangle Contra Angle.—A contra angle formed by two angles as described under contra angle.

Triple Angle Contra Angle.—In an instrument of the angle of 12 centigrades or less (about 45 degrees)—the binangle contra angle will bring the cutting edge sufficiently near the central line of the shaft, and at the same time carry the shank sufficiently out of the way to permit the use of the full length of the blade; but instruments of a greater angle, a binangle would not do this, therefore a triple angle contra angle must be made; this is done by first bending the shank backward as in the binangle contra angle and then forming another angle which will bring the remainder of the shank parallel with the shaft; then passing forward a space of more or less length as may be required, another bend is made forward by which the blade is formed. In this way the cutting edge of a long blade is brought sufficiently near the central line of the shaft for effective work, and the shank carried sufficiently out of the way to permit the full use of the length of the blade.

Long blades that require contra-angling are mostly for use in places where a long reach of blade is necessary.

There are a number of other sub-class names that have been applied to excavators, but as none of them will be used they will be passed by for the present. Also, there are a number of sub-class names applied to plugger points, as cork screw, cow's horns, bayonet, etc., but as we shall not fully consider pluggers in this paper, they will also be passed.

Curves occur among the rights and lefts or double plane instruments for which no distinctive names have been developed. Those forms which I designate as spoons have a curve beginning at about one third the length of the blade and gradually increasing to the cutting edge. Another form often seen, but which now seems to be in less favor, is what I should term the hoe spoon. This blade is straight like that of a hatchet until near the cutting edge, when it is bent laterally at an angle, and the cutting edge rounded as in the spoons. These are in pairs, as the spoons, and are true double plane instruments.

Other forms that have been used are almost endless, many of them without names, and very generally have disappeared under the law of unfitness for the purposes intended.

RULES FOR CONTRA ANGLING.—RECAPITULATION.

1st. All blades, the angle and length of which will bring the cutting edge more then three millimeters from the central line of the shaft, should be contra-angled.

2nd. All instruments with angles of 12 centigrades or less, when requiring contra angles should be binangle-contra-angles.

3rd. All instruments with angles of more than 12 centigrades, when requiring contra-angles should be triple-angle-contra-angles.

4th. When the contra-angle is used the cutting edge of the instrument should be brought within two millimeters of the central line of the shaft, or better—when the contra angle is used the working edge should be brought just so near the central line of shaft that when the instrument is laid edge downward upon a plane surface the edge should just touch, but not actually rest upon the surface.

(To be continued.)

A LITTLE HINT.

By G. H. REYNOLDS, B.A., D.D.S., Strathroy, Ont.

Dentists could save themselves much from the unpleasantness and unhealthfulness of inhaling their patients' breath, while performing long operations in gold filling, when the rubber dam is applied, by placing a sheet of paper from a gold-foil book before the patient's nose, securing it under the dam and elastic fasteners. It also prevents the moisture from the breath coming in direct contact with the gold while packing. This makes it equally agreeable to the patient. This suggestion may not be new to many of our professional brethren, but it would be well if it were more practised.

HINTS.

By a Lazy Man.

AMALGAM. If you have vol. 3, *Canada Journal of Dental Science*, 1870, read what was written on this subject, pages 169, 321, 360, 370.

IF you can get any of the old laboratory tools of Chevalier ——, shears, plate punches, pivot punches, etc., they will put to shame the rubbish of modern steel.

MOULDING sand. Take ordinary bath-brick finely powdered. Add about 40 per cent. to your moulding sand. It makes a cohesive, compact and sharp impression.

OLD Journals. Look back over them from time to time, and you'll discover that you either never read them before, or that you've forgotten many valuable hints they contain.

MOST of women do not mind so much being hurt, as they mind having a nice dress spoiled. Use a rubber apron for the dear creatures when taking impressions ; you'd make a much better one, too.

SAW large spools in two. Handy to lay instruments on, for bench blocks. Drive nail through a spool on your work bench. Fasten spools anywhere convenient in or near your operating stand so that they will hold your floss silk and gilling twine.

ANOTHER very nearly serious explosion of pyrozone tube is reported. When you are plainly directed to keep it in a cool place ; to cool it in icy water and wrap the tube in a towel before opening it, you should obey instructions. A man who lights his pipe on a can of gunpowder deserves to be blown up.

IF you have a silver-plated fountain spittoon, do not let your patients eject into it loose particles of amalgam. They may adhere to the edges of the basin, and irreparably corrode the plating. One of the handiest things about a chair is the small hand spittoons. I use a china bowl if I use iodine in the mouth.

KEEP an assortment of small rubber rings on upright pieces of wood or steel, the size of a match. I often use them for ligaturing rubber dam. Slip on and off easily ; do not hurt gum like silk. Handy too in keeping in cotton, etc., over temporary preparations in large and shallow approximal cavities. Can cement them over cavity.

COMMON cut tacks. Drive them in any form you like into plaster models to make air-chambers. Use them for some lower sets. Do not leave them on your laboratory stool.

FASTEN two pieces of thin wood, double the size of a match, placing a small rubber ring between them before you fasten them. Then slip over each piece small rubber ring, to meet each other. Make handy tweezes for cotton pelletes dipped in iodine, or for any purpose which would injure steel. I think I must have stolen this idea.

CORKS, champagne corks especially. Better than buff cones or wheels. Cut them into any shape to get into any hole or corner. Thin slices make best non-conductor for exposed pulps. Stick laboratory files into them for handles. A big piece square makes fine laboratory block. Cut a lot of them into shape for mouth gags, and tie string to them. Cork soles best soles for the dentist's feet.

MUST stop ; very lazy again.

OBSTINATE HÆMORRHAGE.

By W. G. B.

A case of unusually obstinate hæmorrhage came under my notice, following the rough extraction of a superior molar. The outer and inner plates of the alveolus were severely smashed ; one gash, made by the forcep, extending a quarter of an inch into the hard palate. Various preparations had been used in the abbatoir where the patient had the operation performed. Tannic acid was on hand, so that was tried, and failing, perchloride of iron was used on top of it. This of course was an incompatible mixture, forming tannate of iron, and rendered both inert. An hour after the operation, the dentist telephoned me, and the patient arrived. After cleansing the socket with hot water and lysol, I packed lycoperdon giganteum into the wound and socket, and retained it covering the entire extent by a compress of spunk, under a steel band fitted to grip the outer alveolus and the wounded palate. The effect was instantaneous. When I was a student of Dr. Chas. Brewster he was using lycoperdon (puff-ball) for hæmorrhage, which was much more common than now. Sir B. Ward Richardson thought the change due to the more general use of fruit, and the improvement in the ordinary diet which produced better blood. Sir Benjamin devoted much attention to the fungus in a work he wrote on the medical treatment of the disease of the teeth. Dr. Brewster was never without a good supply of puff-ball, and in common with him

I never failed with it, and never depended upon anything else, so so far as alveolar hæmorrhage was concerned. Several cases of spontaneous bleeding from the gums were arrested by packing it into the interdental spaces. A few years ago Dr. Klotz in one of his "Translations" gave us an account of its use by a surgeon of Edinburgh. Some years ago a fatal case of spontaneous bleeding of the gums occurred in Montreal. A dentist was called in who could think of nothing more ingenious than extracting several teeth and trying to plug the sockets with plaster of paris! After a final surgical resort of ligaturing the carotid the patient died. I have had several cases of vicarious bleeding from the gums, which the lycoperdon arrested. It is found in the fields, especially on sandy soil, in the fall of the year.

Dr. Brewster found the greatest virtue to lie in the genus lycoperdon bovista, which is smaller and scarcer than the genus giganteum. The doctor conceived the idea of medicating it with camphor and carbolic acid to remove certain objections. The theory of the effects of the fungus is explained by the excess of phosphate of soda, the styptic properties of which were once in repute.

Correspondence.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—A remark in the *Review* impressed us as worthy of attention. It was concerning the spirit of the members of the Odontographic Society of Chicago. "Its entire elimination of politics, and recognizing no faction, etc." Good fraternal feeling is something of emulation in all bodies. We congratulate Chicago and the West that such is the fact. We are not emphazising anything but another fact when we say such is not the spirit of New York City proper. The division of the Odontological Society is much regretted by many of the *best* members of the profession of the city and its surroundings. It is more and more felt that it was *never* a necessary step that was taken, while it will be admitted that not a little did there arise that nettles human nature; but, over against all that, there were very many reasons why a higher element should have prevailed and saved the repute of the associated portion of the profession of such a city as New York certainly is, from a stigma that more and more deepens a shadow over the future possibilities, of creating an atmosphere for progressive efforts among the coming portion of those that are to take the place of the present generation. If it is to become a more noble and self-sacrificing, it certainly must, a larger example. While we have not—from the initial step of forming the Odontological Society—been in sympathy with the formation of the Society at the time—with the real purpose it had in view—yet we have come to see that this Society has had put into its hands possibilities that augured for much good, not only for the general membership, but such that could and would have reflected a higher standard for aspiring dentists, that were sure to be among the coming generation of practitioners. To any one coming among the associations of this body and its quarters, they could not but be favorably impressed with the beginnings that so markedly indicate an enterprise that was well worthy of emphatic energy looking to the increase. To what do we refer, it will be asked? It is to the cabinets filled with a quality of material that would richly grace any of the museums of our country. No scientific body can boast of anything finer. It is up to date as a scientific standard. We have definitely noticed the animated attention that these cabinets have secured from strangers; to many it has been a decided surprise and it has given an *eclat* to the Society quite little thought of by the mass of practitioners. While, as we have said, we have not been personally engaged in the participation of this creditable work, yet we have always, when visiting the Society meetings, felt a professional pride that this Society was marked by such *good* beginnings. Now, in the midst of all this good prospect, that there should come such a destructive blow to the Society's prosperity; it is lamentable that those who have taken so good a share in the helpfulness in providing this attraction, embodying so much of educational advantage, should have so ruthlessly broken ranks and torn themselves from the enjoyments and emoluments that they so much aided in securing, and more, they have lessened the high standard that is naturally looked for in bodies that assume *high* aspirations. We say that it is a *destructive blow*, not only to the Society, *but* we predict that it will prove to be far more reaching in its dire effects to those that have forsaken the *larger* prospect for what must be the *lesser*. From all we know, we assert that we are acquainted with the prime facts that led to the resignation of nineteen members of the Society. We chanced to be present when it was plainly manifested that the major grievance was emphasized. It was this: the Society had divided for good reasons that had become apparent, viz., that it was for the interests of the Society that their proceedings should go back to the larger channel of circulation which it had formerly used, which was the *Cosmos*. Previous to this effort for satisfaction, etc., there was a hope that these better counsels would prevail, and that there would be a *partial* return at least to the parent society. But the agent that was sent to demand satisfaction was, unfortunately, of a temperament not in the least qualified for conciliation, and his efforts were an *absolute* failure, as we saw from the start it must be. Without adding more, we confess that we do not see a pleasant future for society advancement in New York City proper. The break must, and does, have a disintegrating effect. As things stand, all society advantage must be retarded, and what was beginning to be a nucleus of august proportions and attraction to a society that had had quite an unusual and popular record, and might have become an object of professional pride, must be shorn of its strength. We are sure no one can say that, united, both factions could have secured a future for usefulness. One thing we do not hesitate to predict, that time will prove an *irredeemable misfortune* if the disunion is selfishly persisted in, and bring a stumbling block in the pathway of true elevation of professional character in New York.

G. ALDEN MILLS.

33 East 62nd Street.

Medical Department.

TUBERCULOSIS OF THE SALIVARY GLANDS.—Though it is easy to induce tuberculosis of the salivary glands experimentally, we meet the disease clinically but very seldom. O'Zoux describes two cases in the submaxillary gland (*Arch. slin. de Bordeaux*, No. 1, 1897). The swelling is considerably larger than in simple adenitis and is exceedingly painful ; the pus is thin and moderate in amount. The author explains the rarity of the disease in this location by the fact that the blood remains in contact with the oral mucous membrane for too short a time to give rise to infection. —*Amer. Med.-Surg. Bulletin.*

MECHANICAL IMPEDIMENT TO RESPIRATION DURING ANÆSTHESIA.—Dr. C. Hamilton Whiteford (Plymouth) writes : Like Dr. Potter, I have frequently observed the mechanical obstruction offered by the lips in anæsthesia. In people with deep flabby lips, especially in those who have lost their front teeth, the lips—the upper as well as the lower—frequently act as valves, allowing expiration but preventing inspiration by their edges being drawn in and completely closing the oral orifice. This valve action is quite independent of any obstructions caused by the base of the tongue falling over the larynx, occurring equally with the chin elevated or depressed. Pulling forward the tongue with forceps, the chin being already elevated, relieves the dyspnœa and cyanosis by separating the lips and allowing the free entry of air.—*Brit. Med. Journal.*

AN ANÆSTHETIST'S MOUTH OPENER AND GAG.—Messrs. Weiss & Son, of 287 Oxford Street, have a little appliance designed by Dr. Frederick Hewitt with the object of affording a ready and rapid means of opening the mouth of the semi-anæsthetized or anæsthetized patient. Owing to the frequency with which the upper teeth overlap the lower, it is often impossible to relieve obstructive breathing by the customary plan of pushing the lower jaw forwards, and it therefore becomes necessary to open the mouth. If the teeth are tightly clenched, and more especially if there are no vacant spaces between them, Dr. Hewitt points out that it is by no means an easy matter to do this. The difficulty reaches its acme in the case of powerfully built men whose upper teeth considerably overlap the lower. The little appliance is made of brass and is, in reality, a curved finger shield more or less wedge shaped, which can be introduced beneath the overlapping upper teeth. When the thin end of the wedge has gained admission the mouth opener is pushed onwards till the teeth are separated by the large end, at which two slots are cut, one through the upper and the other through the lower wall. When once the teeth have fixed themselves in these slots the finger may be taken out of the instrument and the mouth will remain open without any further assistance.—*Brit. Med. Journal.*

REMARKS ON THE EXPLORATORY PUNCTURE OF THE MAXILLARY SINUS AND THE "SEROUS AFFECTION" OF THIS CAVITY. —G. Krebs, in *Archiv. fur Laryng. und Rhinol.*, Band 4, Heft 3, inquires whether the exploratory puncture of the antrum of Highmore is quite harmless. The procedure is employed chiefly in cases of nasal suppuration, in order to discover the source. Asepsis in the nose being impossible, a healthy antrum may become affected. A number of cases in which operative measures in the nose have led to suppuration in the antrum have been described, although there is no instance on record, to the author's knowledge, in which exploratory puncture of the antrum led to its infection. He regards as suspicious, however, the reference of Noltenius to "an almost clear serous fluid which subsequently became cloudy and then purulent;" also Grünwald's statement that in some cases he explored the antrum four times before he found pus. Grunwald holds that exploratory puncture with a negative result proves nothing. The author, on the other hand, points out that in antral empyema pus is always present in the cavity, so that when exploratory puncture yields a negative result we have conclusive proof that the antrum is unaffected. While surgical principles point to the inferior meatus as the proper place for perforating when we have the treatment of the antrum in view, the author reminds us that for exploratory purposes the middle meatus is better suited, owing to the thinness of the wall. In consequence of frequent trial puncture, a new form of disease has appeared—the "serous affection" of the antrum, as described by Noltenius.

Since the publication of this writer's paper, the author has found serous contents in the antrum in two cases. In both there was empyema of the frontal sinus of the same side. As none of the subjective or objective symptoms could be attributed to this "serous affection," it was not treated. In both cases, after a week, the antrum was again punctured, and found empty. In one of the patients this procedure was repeated a year later, with a similar negative result.—*American Medico-Surgical Bulletin.*

IMPRISONED TOOTH: AN OBSCURE CAUSE OF CERVICAL ABSCESS.—Mr. T. R. Jessop read a paper on the above subject, giving particulars of two cases. In the first, a female of 25 had suffered from pain in the lower jaw for some years. After extraction of a molar tooth an abscess formed, which discharged through the cheek, closing, refilling, and bursting from time to time. Later all the teeth on this side were removed, but without any benefit. When Mr. Jessop saw the case bare bone could be felt at the bottom of the sinus, and on exposing the jaw under ether a minute hole was observed leading to a large cavity containing a carious bicuspid tooth. This was removed, and in a short time healing was complete. In the second case, a man of 45, similar symptoms were present, but there were in addition several sinuses in the neck leading towards the ascending ramus of the jaw. Examination with a probe revealed no bare bone. All the molar teeth had been removed in the upper and lower jaw on that side some six years previously. The upper jaw was wider and thicker and more substantial than natural, whilst the lower was sharp, firm, and compact. This observation led Mr. Jessop at the operation to attack the upper jaw first, but he was unable to find any disease. On gouging the lower jaw the marble-like surface of a tooth was struck, and a full-sized wisdom tooth undergoing caries was extracted. The sinuses ceased discharging, and in a few days had entirely healed.—*Brit. Med. Journal.*

CONGENITAL TEETH.—Details of three cases and references to seventy more are given in the *Edinburgh Med. Journal* by J. W. Ballantyne. From a study of these cases he arrives at the following conclusions: (1) Congenital teeth form a rare anomaly, but one which has long been known both to the profession and to the public. (2) Their presence has often an ill-effect upon lactation, partly on account of the imperfect closure of the infant's mouth, and partly by the wounding of the mother's nipple; sublingual ulceration may also be a result, and infantile diarrhœa and atrophy are more distant consequences. Sometimes, however, symptoms are altogether absent. (3) Congenital teeth have probably little or no prognostic significance as regards the bodily or mental vigor of the infant carrying them. (4) The teeth usually met with are lower incisors, but sometimes upper incisors may be seen, and very rarely molars of either the upper or lower jaw. Other facial or buccal malformations may occasionally be met with. (5) They are caused by the premature occurrence of the processes which normally lead to the cutting of the milk teeth ; in a few cases it would seem that the anomaly is due to a true ectopia of the dental follicle and its contained tooth. (6) In a few instances a hereditary history has been established. (7) As the congenital teeth are usually incomplete and ill developed, and more likely to be more an inconvenience than an advantage to the infant, they are best removed soon after birth, an operation which can be easily and, except in very rare instances, safely performed. (8) The occurrence of premature teeth in certain historical personages is an interesting fact, the importance of which has been much exaggerated.—*Canadian Practitioner, Nov., 1897.*

A SALIVARY FISTULA OF THIRTY YEARS' STANDING : OPERATION : CURE.—Mr. G., aged 61, native of St. Helena, consulted me in June, 1896, for what he termed "a leak in his neck." Examination revealed an opening about the size of a small pinhead situated in the inferior portion of the superior carotid triangle of the left side of the neck, and from which there was oozing a thin watery fluid. On giving him a small crystal of citric acid to suck, the flow of this fluid would markedly increase. It was evidently salivary secretion. I passed a small probe into the fistula in the direction of the parotid gland about two inches. Over thirty years ago the patient underwent an operation for an enlargement in the neck, which he says the doctor called "a tumor"—what variety of tumor I could not elicit from the patient. After the healing of the wound, which was several months after the operation, he noticed that his neck was always wet, and that from the lower portion of the cicatrix there seemed to be an oozing of water. He had undergone treatment on several occasions without success. I injected, hypodermically, cocaine, placing the patient in the recumbent posture (which I believe to be the only safe manner for the administration of that anæsthetic), and passed a probe well into the fistula. I then passed a curved needle, threaded with heavy silkworm gut, well under the probe and fistula, bringing it out on the other side. Removing the probe I ligated the fistula. This would be at a point about 4 c.cm. from the opening of the sinus. Reinserting the probe to the point of ligation, I cut down upon the probe, laying the fistula open, and curetting thoroughly, sutured the incision with three or four sutures. I asked the patient to return in four days. Examination then showed no signs of suppuration, and the wound seemed well healed. On the fifth day I removed the ligature. On the eleventh day the sutures were taken out. It is now fully three months since the operation, and there are no signs of the recurrence of the fluid, and the surface is thoroughly healed. The only points to be noted in this operation are these: The ligating of the fistula at the proximal end of the fistula, thus shutting off the flow of saliva, to allow the curetted portion of the canal to heal; and the early removal of the ligature before its cutting its way to the fistula, or causing the parts to slough. I might here add that I found the opening of Stenson's duct, and I had no difficulty in passing a probe its full length.—*Brit. Med. Journal.*

THE MEDICAL TREATMENT OF TOOTHACHE.—(Frederick C. Coley, M.D., Physician to the Children's Hospital, Newcastle-on-Tyne, and to the Northern Counties Hospital for Diseases of the Chest.)—Beyond all question the treatment of toothache is mainly surgical. An aching tooth is usually carious and should be "stopped," if that can be done with a fair prospect of success. Carious teeth which cannot be "stopped" had better be extracted as a general rule. But I need not waste time in enumerating the circumstances which often arise to make these simple rules inapplicable; and no one who has recently suffered from a "jumping" toothache will be inclined to think that I need not apologize for asking a little space in which to enumerate the remedies which I have found successful in such a common and painful ailment. I may say at once that I believe very few toothaches are incapable of permanent relief without extraction of the tooth. That operation is very often the most desirable way of procuring relief, but it is very rarely the only way. Thousands of people have carious teeth without toothache, which proves that caries is only one factor in the production of pain. The other factor may (and commonly does) prove to be removable, and then the pain ceases, though the carious tooth remains. And, on the other hand, it is only too common to find that neuralgic pain persists after the extraction of tooth after tooth, which might perhaps have done good service *in situ.* A toothache which is "scotched" by appropriate means often ceases permanently; or it may return once or twice (being again relieved by the same, or some other, remedy) and then finally disappear. To attack a pain of this kind by a mere narcotic, such as opium or morphia, seems to me rather clumsy therapeutics, and we can usually find much more suitable methods. Alcohol in any form is still more objectionable. One of the most melancholy cases of alcoholism that ever came under my own observation had its origin in the inconsiderate recommendation of stout as a remedy for dental neuralgia. It is partly because I desire to replace these dangerous narcotics by more effectual and safer remedies that I have determined to write the present paper. The pain of a hollow tooth may generally be entirely removed by inserting in it a pledget of cotton wool soaked in carbolic acid liquefied by the addition of an equal quantity of water. A pledget of dry wool should be placed over the carbolized wool, to retain the acid. The aching usually ceases in a few minutes, but may recur after a few hours, to be again relieved on a reapplication of the carbolic acid. A very few repetitions commonly suffice to make the cure permanent. But of course the hollow tooth should be stopped, if possible, afterward. A gentleman came to me one day in terrible agony from a raging neuralgia located in the part of his lower jaw from which he had lately had several teeth removed. I applied to the gum rather less than half a grain of cocaine in powder. In a minute or so he exclaimed, " It is gone ! " and the changed expression of his countenance showed how complete was his relief. Better still, the neuralgia never returned, though he had previously suffered from it at intervals for a considerable time. Probably the permanence of the cure was attributable to a quinine mixture which I also prescribed. It would, however, be unwise to give the patient a prescription for cocaine or a quantity of the drug to be reapplied p.r.n. Such a course would involve no little danger of setting up a habit leading to cocanism. Persons who have been for some time deprived of a proper allowance of sleep, from any cause, are very liable to be painfully reminded of the existence of any bad teeth which they may happen to possess by an attack of dental neuralgia. If this is not soon relieved by appropriate means it tends to aggravate and perpetuate itself by still further depriving the patient of sleep. I have found the following prescription very useful in such cases :

℞ Quin. sulph	gr. ii
Acid. hydrobrom	m. xv.
Tr. gelsem	m. xv.
Syrup	ʒ iss.
Aq. ad	℥ j. t.d.

I have seen a raging toothache completely relieved in a few minutes by a single dose of two grains of exalgin. It is best given in solution. Half a drachm of rectified spirit will dissolve as much as gr. xx of exalgin, and this does precipitate on dilution with water. Exalgin is, however, a somewhat uncertain remedy. Sometimes it is a brilliant success, and sometimes it is an utter failure. There is a kind of toothache which comes on after taking food, when the contents of the stomach are naturally acid. This is often relieved with quite astonishing rapidity by the administration of an alkali. The best way is to give a seidlitz powder, minus a quarter of the acid, so leaving an excess of alkali. In a typical case of this kind the pain ceases instantaneously—almost as soon as the effervescing draught is swallowed. But of all medical remedies for toothache I know of none which is so successful as salicylate of sodium. I believe it is especially useful in those cases where the pain is started "by taking cold." Even in the condition which is called by dentists "periostitis," where the carious tooth becomes slightly loosened and projects beyond its neighbors, and is exquisitely tender when eating is attempted, I have often known sodium salicylate to be completely and permanently successful. A dose of gr. xv. will usually relieve the pain very promptly, and if this is repeated every four hours the inflammation may entirely subside, leaving, of course, a carious tooth to be disposed of according to circumstances. The addition of belladonna is often advantageous. Fifteen grains of sodium salicylate, with fifteen minims of tincture of belladonna, will often procure refreshing sleep instead of a night of agony. I believe that this use of salicylate of sodium is not generally known. I first became aware of it by experience in my own person; and since then I have used it with many brilliant successes and few failures in a very large number of patients. I have once, however, known phenacetin to succeed where the salicylate failed. But the salicylate is much more worthy of confidence as a rule. It is especially valuable in children, where extraction of teeth is to be avoided, if possible, lest the development of the maxilla should be injured.—*Canadian Practitioner, Nov. 1897.*

Selections.

BRITISH TEETH ON THE DOWN GRADE.

By Charles Fox, L.D.S.

Abuse of Drugs.—Probing once more into the conditions that operate in this year of grace 1897, and placing them alongside earlier periods in the century, we find an important though perhaps secondary cause for dental deterioration, in the enormous increase of medicine-taking, by all sorts and conditions of citizens. True it is that the physicians with deepest insight into the laws of health rely less and less on drugs and more and more on a sanitary environment for their patients, with strict rules as to diet, clothing, bathing and exercise. But the deeply rooted prejudice in favor of a "bottle of medicine" obliges many a doctor to supplement his really important advice by a needless prescription. And while the drugs are poured down the long-suffering alimentary canal with regularity and touching faith, the more weighty matters of fresh air or exercise will be treated as mere fads of the doctor. One of George

Eliot's most humorous character sketches is that of the old lady in "The Mill on the Floss," who used to show her friends many shelves of empty medicine bottles. There they stood in long array, fragrant witness to her much-to-be pitied state, and yet all the time a cherished monument of pride to the invalid. But this abundant dosing was a luxury of the well-to-do in those days, whereas from a thousand dispensaries and ten thousand chemists' shops in these prosperous days, flow out an ever-widening stream of physic to combat the stress of civilized life. Only the other day a parish doctor found one hardened pauper in his care could boast of having consumed one thousand gallons of medicine all paid for by a tender-hearted nation.

I can remember noticing the dispenser in a busy provincial hospital very frequently filling bottles straight from a large jar. I asked to be enlightened as to the special virtues of this popular mixture. "Oh! that's the faith, hope and charity blend," responded the chemist with a knowing wink, "plenty to taste and smell, nothing to harm a child; and yet, believe me, effects half the cures in the out-patient department." Empty handed, they go away sullen and disappointed, but with a bottle of brown sugar, peppermint and aqua pura they march home light of heart, for "hope springs eternal in the human breast."

Were the prescriptions all of this innocuous order, we as dentists need make no moan. But when diluted sulphuric acid and iron, for instance, as direct destructors, and mercury, arsenic, iodide of potassium, and bromide of potassium as indirect agents for dental mischief, enter so constantly into medical prescriptions we may rightly call for pause. Of course the lesser must give place to the greater, and in cases of virulent or serious disease, the teeth be of secondary importance. All we wish to urge is that they should more often be placed in their rightful perspective, and the servants of a lifetime not be injured while dealing with the temporary symptoms of a passing ailment. This criticism, be it understood, is made "with bated breath and whispering humbleness," but an experience like the following is of too frequent an occurrence in every dental office to prevent our duty being to speak a word in season to our medical brethren. A young woman in service had been a terrible sufferer from neuralgia for more than six months. She attended a dispensary and religiously swallowed twenty-five bottles of physic, containing among other things iron and strychnia. Not once was her mouth examined, or any instructions given to visit a dentist. Finally when the toothache became sufficiently localized she came to have her teeth seen to. A wrench with a pair of forceps cured the neuralgia at once, but the effects of iron and strychnia on the other teeth and general nerve power will never be set right.

But beyond the field of professional prescription lies the vast territory of quack medicine, as boomed in a thousand journals and magazines. The British people polish off 200 millions of pills per annum, as our patent medicine stamp duties bear record, and what boundless oceans of safe-cures, balms, oils, elixirs of life, and soothing syrups are greedily imbibed by the credulous population of these islands? No more terrible instance of our national power, no, not the Jubilee Naval Review itself, can be named than the fact that we sell to foreigners £800,000 worth of patent medicines every year.

Harping back on the one item of iron, it is this in its numerous forms that is the sheet anchor in cases of anæmia. Now anæmia is frequently caused by an indoor life with white bread and tea diet; and the kind-hearted mistress who sends her maid to the dispensary, would be acting a wiser part if she insisted on the pale-faced housemaid spending an hour or two in the sunshine every day. The way in which delicate children, for they are often nothing more, are kept in underground kitchens, or closely confined to the house, day after day, with a glimpse of twilight liberty once or twice a week, is a scandal to our civilization. No class needs the dentist's help more than the domestic servant, and in these poor white slaves, with their wrecked mouths, we see the evils of an unwise diet, bad air and strong medicines in their most pronounced form. If iron must be taken, let the patient use it in the form of a bicycle, for that prescription has cured thousands of stubborn cases of anæmia, since fashion blessed the merry wheel. In one big house of my acquaintance, where servants succeeded one another at frequent intervals, they all rapidly developed dental trouble. From healthy country lasses they degenerate into pallid, languid creatures, with fetid breath and lack-lustre eyes. The young ladies a story or two above, revel in sunshine and healthful exercise, and are financially valueless to the dentist. The good lady imagines she is doing her duty by her dependants, for they are not overworked, and the medical and dental bills cost her a pretty penny, but let her try for herself and children one month in the kitchen, with one evening and Sunday afternoon out for weeks and doubtless they would also peak and pine.

There is a medicine habit as well as opium or alcohol habit, and as the wisdom of our people grows, and the firmness of our physicians, there will be less recourse made on every trivial pretext to drugs. A young doctor remarked to me when discussing this question, and he was an honored man in his day, " I firmly believe that England without a chemist's shop or dispensary or any medicine stronger than dandelion and stewed figs would be a healthier nation than it is to-day, Whenever I find my patients educated to the comparative importance of obeying common-sense hygienic orders, I bar internal medicines altogether. With the rest I am depending more and more on mild vegetable drugs, linked with repeated advice as to the things to do and the things to be left undone. Strong mineral drugs or powerful nerve tonics effect their cures at too great a permanent cost."

If a person eats half a hundredweight too much sugar every year, Aunt Hannah's Syrup will not re-establish their dental integrity. The child who is robbed of milk and stuffed with cornflour cannot be coaxed into stalwart youth by the aid of Mr. Gainfast's Soothing Syrup. Pale-faced girls in factory or suburban kitchen on meagre allowance of sun and breeze will not permanently blossom into blushing beauty on Dr. Blaud's Pills for Blue People, nor will old men with kidneys ruined by years of excessive drinking renew their youth on a course of Safe Cure.—*British Journal of Dental Science.*

THE NEXT GENERATION.

Those who have been dentists for twenty-five or more years, and who are conversant with what is now taught and practiced by the advanced men, can but be astounded by the developments of the past quarter century. In those early days dentistry was merely a vocation. It was almost exclusively mechanical. To be sure, we were accustomed to speak of it as a Profession, with a big P., but there was very little that was really professional about it. It was merely manual labor of one kind or another—labor of a superior order, of course. Men eminent in dentistry openly proclaimed that if all knowledge of medicine could be at once and forever blotted out, it would not in the remotest degree affect the " profession " of dentistry.

Now, in the closing days of the century, we see medicine clearly and definitely divided into a number of well-defined specialties, and dentistry advancing to occupy one of these fields. This partition of medicine has become an absolute necessity, and it must year by year grow yet more marked, because, as research and study enlarge the field, it becomes more and more too great for one life thoroughly to master. The diseases of the eye and ear naturally fall to the oculist and the otologist. Affections of the skin are referred to the dermatologist, etc., etc. Disorders of the oral cavity must necessarily come within the province of the educated dentist, and these naturally carry with them lesions of the subsidiary or associated cavities, so that not only such affections as stomatitis, gingivitis, ulitis, glossitis, all degenerations of the oral mucus-membrane, the ordinary tumors of the mouth, with disorders of the maxillary and frontal sinuses, will fall within his province, but affections of the pharynx as well. Indeed, there is no one who has such excellent opportunities for the examination of the pharyngeal cavity as the dentist, and the treatment of the different forms of pharyngitis should be taught in our schools. Already this is the case in some that we know of.

One does not need to look far into the future to forecast the day when dentistry itself must be divided into specialties. If the present rate of development should continue for another quarter century, the practitioner of 1925 may be either a Prosthetic Dentist, an Operative Dentist, an Orthodontial Dentist, or a Medico Dentist. The general practitioner in dentistry will at that time be as infrequently met with as the general medical practitioner is at the present time. The field will be far too broad for one man to cover. He will not in his lifetime be able to master the whole science of dentistry, any more than now he can become learned and skilful in all the branches of medicine.

Does anyone entertain the idea that such visions of the future are fanciful, visionary, utopian? Let him look back a quarter of a century, note the progress made, and then calculate where that rate will land us in 1925. Surely, it will not be contended that the advance of the future is to be less than that of the past. As man develops in intelligence and in the comprehension of scientific laws, these but become instruments for future use, to enable him to accelerate his rate of progress. Look back twice twenty-five years, and see how many secrets of nature have been wrested from their hiding places. The steamboat, the railroad, the telegraph, the telephone, the phonograph, the microscope, the spectroscope and a hundred other triumphs of science have been added to the armamentarium of man, only to be used in making further discoveries. We do no mean that all these were utterly unknown fifty years ago, but their modern uses were yet a secret. Fifty years hence the world will be employing all these instruments in a hundred ways now unknown.

Surely, dentistry must progress with the rest of the world, even if it does not keep up its present rapid pace. Already Prosthetic Dentistry is divided by those who give almost or quite exclusive attention to "crown and bridge work." It is no argument to say that this specialty has been fearfully abused, and that too many of these "specialists" are the worst kind of empirics and quacks. Every new discovery drives unbalanced men daft for a time, but in a few years it gets shaken down into its proper place. It will be so with all the new discoveries in dentistry, and then—it makes one dizzy to think of what are the possibilities of the future.

All these considerations must presuppose an educated profession. In 1925 the standard of preliminary qualifications will not be the ability to read and write. Undoubtedly there will then be a class of dental mechanics in which a classical education will not be a necessity. But for those who shall pretend to occupy any of the higher walks, erudition will be the first prerequisite. Our colleges will be teaching branches that will require trained intelligence to comprehend. Those who are not possessed of this will be shaken through the meshes of the professional net, and will bring up on the lower levels, while the larger men, those having a liberal education with a degree of native intellectuality, will keep their place at the top. Patrick Henry said that his feet were guided only by the lamp of experience. It will be well for us if we permit its rays to light up our future professional path.—*Dental Practitioner and Advertiser.*

Tit Bits from the Editors.

As the literature of a profession must keep even pace with it to be of either historical or didactic value, so too the literature of dentistry must continually broaden and endeavor to include within its grasp all that pertains not only to the science and practice of dentistry by itself, but all that is correlative to it.—*Pacific Medico-Dental Gazette.*

DR. MOORE, of Frankfort, has recorded a case of symptoms of poisoning which he affirms was caused by the application of cocaine to the dental pulp by means of the electric current. After thorough investigation to discover the cause of the accident, he is convinced that the apicial foramen was very patent, so that the cocaine rapidly entered the system.—*Brit. Jour. Dental Science.*

As a matter of every-day experience it is not the best educated practitioner who has the inclination to treat cases which would be referred to some one else; on the contrary, it is the ignorant general practioner who fails to see the advisability of calling in the consultant, the ignorant dentist who treats a case that should be in the hands of a surgeon or physician. There are plenty of dentists who hold full medical qualifications, are members or fellows of the various qualifying bodies, or doctors of medicine; but do we find even these undertaking in their practice cases which they, in one sense, properly might, but which at the same time they know would be better handled by others? Most emphatically no; but that is just what the ignorant practitioner often does, whether in medicine or dentistry.—*Journal of British Dental Association.*

IT is a pitiful fact that notwithstanding all the influence which his college connections bring to bear in the formation of his professional character, there are a few men who are apparently beyond the reach of the kind of influence alluded to (the discountenance of every act which savors of quackery), and occasionally we hear of violations of the code, both in letter and spirit, by those who have graduated from this department. Fortunately these are but few in number, so that the walls of "Dental Parlors and Local Anæsthesia Joints" are rarely adorned with the diploma of our institution. The very rarity of such an occurrence makes it all the more flagrant when found, and the just indignation of all reputable alumni should express itself without hesitation against the man who would thus besmirch the fair name and fame of his *alma mater.—Pennsylvania Dental Journal.*

THE Dentists Act has narrowly escaped one of the most deadly blows it could have received—a blow which would have destroyed many years' work of the executive of our Association, and again opened the floodgates for the rush of incompetence and pretentious ignorance to swamp and sweep away the educational efforts which have raised our profession to its present level, and which, we are proud to think, has stimulated dental education throughout the whole world.

. . . . . .

There is no foreigner excluded from our profession if he chooses to go through the curriculum which we exact from our own countrymen. Such exactions are imposed upon us by other countries and other governments, and we are quite prepared to accept such conditions, but no amount of law-breaking or any number of doctorate diplomas are likely to be received here in lieu of the primary requirements.—*Journal of the British Dental Association.*

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. = = = = MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

GERMAN EDITOR:
Carl E. Klotz, L.D.S.,
ST. CATHARINES, ONT.

FRENCH EDITOR:
J. H. Bourdon, L.D.S., D.D.S.,
MONTREAL, QUE.

ABSTRACT EDITOR:
G. S. Martin, D.D.S., L.D.S.,
TORONTO JUNCTION, ONT.

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KINGSTON, ONT.

CORRESPONDING EDITOR:
W. R. Patton, D.D.S.,
COLOGNE, GERMANY.

EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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THE CHARTER OF PROFESSIONAL ETHICS.

A correspondent in Nova Scotia, who thinks we are too hard on the semblance of quackery which appears in his advertisement, bluntly asks us who appointed us the judge of dental ethics? We are indebted to him for his frankness, because it never occurred to us before, that there was any one so unreasonable as to suppose that we arrogate for this Journal any such position. Whatever has been said editorially from time to time on this subject, has certainly been the expression of our personal opinion ; but it has been based upon professional law and codes of ethics, which were framed before our correspondent was born, and which are directly applicable to licentiates in every Province of the Dominion where the code has been accepted. It constitutes the text for all our action, and if the editor is to be censured for demanding obedience to laws and regulations by which all licentiates are, or should be governed, who is blameless? We are all in the same boat ; but when we find any of the crew trying to scuttle it, shall we help him or choke him? Perhaps the best answer we can give our correspondent is the following extract from the code of ethics of the Dental Association of his own Province, adopted five years ago, and at the head of which "Special attention is called to Section 6." We may add this extract is precisely the same as the code used in the other Provinces.

"Sec. 6. It is unprofessional to resort to public advertisements such as cards, hand bills, posters or signs, calling attention to peculiar styles of work, prices for services, special modes of operating, or to claim superiority over neighboring practitioners; to publish reports of cases or certificates in public prints; to go from house to house soliciting or performing operations, to circulate nostrums, or to perform any other similar acts. But nothing in this section shall be construed so as to imply that it is unprofessional for dentists to announce in the public prints, or by card, simply their name, occupation, and place of business; or in the same manner, to announce their general absence from or return to business; or to issue to their patients appointment cards, having a fee bill for professional services thereon."

The above is very clear and comprehensive. It encroaches only upon the liberty of licentiates who want the public to believe that they are in some way superior to the ordinary run of dentists. If the code is oppressive let it be cancelled. But while it is the one sign by which we claim a right to dignify dentistry as a profession, and so long as the professional organizations of our Province stand by it, so shall we. Our correspondent could find a few friends, who might join him in popularizing a movement, for the independence of dentistry from any professional code which restrained a licentiate from blowing his own trumpet from the house-tops of Ontario and Quebec.

"LAISSER-FAIRE."

It is not easy to touch pitch without defilement. A white lie is close neighbor to a black one. A dentist cannot safely venture beyond the legitimate limits of advertising, without risk of getting into depths he never expected. We have witnessed instances of this many times. Quacks never take their models or methods from reputable practitioners, but if reputable men think they can refine the models of the quacks to reputable appearances, they take a first step towards full imitation. We can never be converted to the belief, that sensational advertising methods of any sort—even if they tell the truth, are professional. Imagine the degradation to law or medicine as professions, were reputable men to imitate the models of some of our dentists. We see dental advertisements in the Canadian press, copied almost *verbatim* from the worst quacks of New York and Chicago. They appeal to the lowest sentiments of human nature; they lie, and of course they do worse when they get the chance. Some of our friends advise us to leave the quacks alone. They are like the weak women who waste their sympathy and flowers upon the vile criminals condemned to die for vile crimes, frequently against women. We have no sentimentality to spare in the direction of quackery, or its imitation, and we believe, in spite of their weak-kneed apologists, we have the support of the profession at large. A little more resolution and straightforward policy on the part of our associations, would have made it as impossible among licentiates in dentistry as it is among licentiates in law and medicine. Our policy has been one of equality of opportunity These advertisers seek one of monopoly by pretensions of superiority which are fraudulent. If we begin to condone what we know should be condemned, the future is not a hopeful one.

Moreover, it is our duty to young practitioners to guide them in ethical principles. Quack advertising is morally and socially wrong, and has not resulted in any permanent benefit to any dentist who has indulged in it. It has been the ruin of half a dozen dentists in Montreal alone. The mere fact that few have made a few dollars is no moral encouragement. It is poor compensation for the life-long stigma of being a quack.

We have done our duty in this business, and without in any way reversing our opinions, we shall watch with interest, how the policy of *laisser-faire* will work.

A TRUCE.

We have been so severely criticised by several friends who are not quacks or quack imitators, for "quacking so much about the quacks," that we have decided upon a truce as a test. The ethical policy of this Journal and its predecessor has influenced some to abandon objectionable methods of advertising. It has persuaded many to avoid an imitation of quack methods. At any rate, it has stuck to its principles through thick and thin, and if in doing this it has not spoken for the profession as a whole, it would be less ashamed of itself than of the profession. To excite an honorable ambition towards decency and dignity seems to be wrong policy in the minds of some of our critics. We have, too, good friends who advise us to "let the quacks alone." We shall take the advice, and watch for results ; it is not one of the joys of journalism to make foes, even out of quacks. The object of all our preaching has been to convert them from the error of their ways, for their own good. There is neither fame, fortune nor favor in the labor for us. The journalist gets no reward on this earth, and will not likely share any with the preacher in the next.

OUR ONTARIO NUMBER.

Our May issue will be devoted exclusively to the reports and interests of the Ontario Dental Society. In addition to the reports, we will publish the portraits of Dr. B. W. Day, the first President of the Ontario Board, Dr. J. B. Willmott, the first Dean of the College, and the officers of the Ontario Dental Society. Our readers will be pleased to learn, too, that we will also present to them the portraits of Dr. G. V. Black and Dr. C. N. Johnson, of Chicago.

EDITORIAL NOTES.

OVERCROWDED professions in the older provinces of Canada. There will be lots of scope for our young men in the Klonkike. If you are going for the purpose of making your fortune as a miner you had better prepare so that you can make a good business. " The bird in the hand," etc.

DR. C. H. WELLS, of Huntingdon, Que., has got tired of putting gold into teeth, and has gone to the Klondike to put it into his own pocket. He has lots of grit. We hope he may get lots of gold. All that glitters *is* gold in that part of our Dominion. Among his " supplies," he took a dental equipment, just to keep his hand in.

CARELESS CRITICISM.—The editor of the *British Journal of Dental Science* editorially informs his readers that he has discovered a typographical error in a headline, and repeated in the text of an article last October in the DOMINION DENTAL JOURNAL. If he had taken the trouble to look at the " list of contents " published in the December issue, he would have seen that it was there correctly recorded. The editor of the *British Journal of Dental Science* was a careless critic.

WE wonder to what depths of professional humiliation some of our dentists will go. Many who ought to be the leaders in thought and action, are following the lead of those who have no respect for the dignity of the profession. The business of "shopping" from office to office has become so general that the only way to stop it, is to charge for consultations. Young men waiting on practice may afford to give consultations free, but they often take up more time than an operation, and men of experience especially, should not demean themselves by permitting "shoppers" to get the benefit of this experience, without any more thought of paying a fee than if they were consulting a laborer about digging a drain. These remarks would often apply to country as well as city practice. Country dentists and doctors do far too much for nothing, but they do not get their merchandise from country stores for nothing. The opinions and advice of the physician is one of the things he has for sale. We do not see why the farmer who will not throw in an extra bushel of oats in a sale, has any right to get an extra advice for nothing.

It is thought by some of the youngest generation of dentists that the existing state of educational affairs should not continue. They do not blame themselves for the supineness of the support they gave to the college at its inception. A number of them joined an early effort to split it, by a puerile belief that there was room for two schools, in one of which they would hold office. On the other hand, among the juniors who make bold to believe that the French and English cannot pull together in a united college, there are several of our most promising young men who are worthily ambitious and thoroughly ethical. They think it would be easy to establish a good English school, but not a good one, French and English There is no reason in existence why a good English faculty cannot be established as matters are. The idea of creating a strong English and endowed school will be against the interests of the profession and the public for a long time to come. Matters are bad enough as it is in Quebec, but the endowed business of manufacturing dentists would very soon prove the ruin of the profession as a means of living. The fad for professorships, however, seems to rush some men on to financial suicide. The younger men should not rush in where their more experienced seniors know it would be unwise to tread. It would be a very easy matter indeed to remedy existing evils.

QUEBEC as a Province has offered many perplexing national problems to the statesman. It presented several to the pioneers of dentistry as an organized profession. Any one at all familiar with the average composition of the Local Legislature, does not need to be told that the difficulties to be overcome in that quarter have no parallel anywhere else in the world. It needed cool heads as well as patriotic hands to lift the bantling out of insignificance into the cradle of its being. Had there been any racial clash there would have been certain smash. Dr. Chas. Brewster, the father of the profession in Quebec, clearly foresaw the absolute necessity for unity of aim and action. Men like the late Hon. Dr. Baillargeon, Dr. C. F. F. Trestler, Dr. Ed. Casgrain and Dr. L. J. B. Leblanc who represented the pioneers among the French dentists at the time, met our efforts in a fraternal spirit which has never been relaxed. It has ever been one of the pleasantest incidents of our history. The English saw the difficulties in the way of their French brethren. Dental education everywhere on the continent was in a language foreign to most of them. The text-books of most value were in English. Various other circumstances conspired to handicap our French students. It would not only have been ungenerous, but most likely unsuccessful, had the English element asked the Legislature, overwhelmingly French, to strengthen the professional interests of one race at the expense of the other. We owed a patriotic duty to the public as well as the profession. The union of the two races in a common association has proved a success, and an object lesson of harmony worthy of study by national and racial cranks.

THE contemporaries of the pioneers knew the personal sacrifices of time and money made by the few men who originated the Association in Quebec. The result was that there was very general appreciation, and certainly no jealousies. As Dr. Brewster once remarked, " the positions of trust seek the men, not the men the positions." It is easy to imitate a state of affairs already in existence ; but the political conditions of Quebec were so peculiar, that conditions elsewhere had little or no application. The English students had the whole world of English dental schools open to him. Their language closed them to the French. When the time seemed ripe for a school, the same spirit of good-will and fraternity prevailed, and the local conditions were met precisely as they had been in the organization of the Association. The profession has grown until it is overgrown. The college was not yet born before certain members of the profession set to work to produce a criminal abortion. They were incapable to be its obstetrician, but they were anxious to be its wet nurse, and when in spite of them the bantling opened its eyes, they hankered to be professors and clinical instructors, and to receive honorary degrees, and because they were disappointed no good could come out of the little school. Such churlish conduct was a crime against the interests of the profession. It is unnecessary to recount the various assaults on the college, from inside as well as outside our ranks. What seemed most desirable by its projector was not attainable, owing to faction. What was attainable was accepted from a sense of duty and necessity. There were men who did their full duty. There were others sharing the responsibilities, and enjoying whatever honor existed, who shamefully neglected the duties they agreed to perform. They could afford to sit as critics of the workers, could they not?

Reviews.

A MONUMENTAL WORK.

A Treatise on the Irregularities of the Teeth and their correction. Including, with the author's practice, other current methods. Designed for practitioners and students. Illustrated with nearly 2,000 engravings (not embracing the classification of mechanism in third volume). By JOHN NUTTING FARRAR, M.D., D.D.S., Esq. Vol. II. New York City: The International News Co., 83 and 85 Duane St. Toronto: Toronto News Co., 42 Yonge St. Montreal: Montreal News Co., 386 St. James St. Price, each volume $6.00, $7.00 or $8.00, according to style of binding.

We are in receipt of the second volume of this magnificent work by Dr. Farrar. It represents an enormous amount of thought and hard work. We propose to review it fully in a future issue. In the meantime our readers need not wait for any outside opinion about the book. It is a splendid investment, and has no rival in our literature.

The Habitant: And other French-Canadian Poems. By WILLIAM HENRY DRUMMOND, M.D., with an introduction by LOUIS FRECHETTE, and with illustrations by FRED. S. COBURN. New York and London: T. P. Putnam's Sons, 1897.

We have departed several times from the path of professional literature to bring before the notice of our readers, some specially Canadian work of *belles lettres*, but never before with such genuine pleasure. In the make-up of our Dominion, we enjoy a happy freedom from the presence of races of people, who, if they contribute to the material interests of a country, do not compensate for the problems and difficulties they add to the future of the state. For a century the French-Canadian was regarded by those who were entirely ignorant of his true character, as the national thorn in our progress, and it is a fact that otherwise intelligent English-Canadians at the time of Confederation, especially in Ontario, despaired of the future of the Dominion because of the French-Canadian questions. Many times in visits to Ontario, we had private and public opportunities to remove erroneous impressions of this character. It was a figment of the imagination and pure ignorance, which only more fraternal meeting could dispel. Dyspeptic writers like Goldwin Smith, sitting in their closets settling the fate of the world in general and Canada in particular, pointed to the French-Canadians as an obstacle to Canadian and imperial unity; but they failed so repeatedly in their prophecies in everything, that they now serve for amusement as a sort of prophetic Punch-and-Judy show. No one but themselves takes them more seriously than the Millerites. To-day we rejoice in Canada, the two races, in a fair and full appreciation of each other's idiosyncrasies, each other's service to the common interests of the country, and in each other's rights. The prefix of each is disappearing. The language of a common loyal duty may be expressed in two tongues, but it has but one common meaning. All the time that our French brother was being misrepresented, he was learning our language, and getting advantages thereby to which his activity entitled him. His native geniality and politeness, his ready instinct to oblige, made him, in whatever capacity he was engaged, a desirable servant, a convenient employe. Many awakened only a few years ago to realize, that instead of a vexatious problem, such as the negro and the socialist is to the United States, the French-Canadian was a providential blessing to Canada, and formed a substantial part of our national backbone.

Dr. Drummond has done a work for the English-Canadian as well as the French. Unconsciously he has picked up the hidden virtues and humanity of the happy French-Canadian peasant, and linked them so firmly to our affections, that Jean Baptiste must be forever recognized as our brother in every family and national sense. The picturesqueness and pleasantry, which his whole life from childhood to old age, give to our existence, is indeed most charming; and those of us who have enjoyed his simple hospitality, who have shared his humble meal, who have gloried in adventures with him in the woods and on the waters, who have spent happy days in his canoe and his old *burleau*, would not exchange him for any one else under the sun. No descriptive or historical work in existence brings us into such intimacy with him as Dr. Drummond's poems. You seem to hold the good fellow by both hands, in a common brotherhood that makes you positively love him, as the soldier in battle loves the comrade beside him. If we were able we would present every dentist and dental student in Canada with this delightful book. The next best thing we can do, is to urge them to own it. If you borrow it, you will feel like keeping it, and you might be induced to commit theft. Perhaps no better test of a true poem can be offered than that it is one whose repetition increases its charms. There is not a poem in Dr. Drummond's book which is not a literary *bonne bouche*, and though it is impossible to introduce the reader to our dear old habitant, through a verse, Dr. D. has made it possible through a volume. The first poem is a recital of his content on his old farm. We wish every English farmer in Canada owned the book. It breathes a gospel of simple content and happiness which they might largely imitate.

His enjoyment of nature may perhaps be somewhat idealized, but his enjoyment of the little good things of life, is true to nature. "The Habitant's Jubilee Ode:" a verse or two will give our readers an idea of the style:

> "Bâ non, an' dat was de way we feel, w'en de old Regime's no more.
> An' de new one came, but don't change moche, w'y it's yus' lak' it be before,
> Spikin Francais lak' we always do, an' de English de make no fuss,
> An' our law de sam', wall, I don't know me, 't was better mebbe for us.
>
> "So de sam' as two broder we settle down, leevin' dere han'-in-han',
> Knowin' each oder, we lak' each oder, de French an' de Englishman,
> For it's curi's t'ing on dis worl', I'm sure you see it agen an' agen,
> Dat offen de mos' worse ennemi, he's comin' de bes', bes' frien'.
>
> . . . .
>
> "Yass! dat is de way Victorian fin' us dis Jubilee,
> Sometam' we mak' fuss about not'ing, but it's all on de familee,
> An' w'enever dere's danger roun' her, no matter on sea or lan',
> She'll find that les Canayens can fight de sam' as bes' Englishman."

The work can be bought from any Canadian bookseller. To our friends over the border we especially commend it.

WE have received the *Philadelphia Medical Journal*, a weekly, owned and published by the Philadelphia Medical Publishing Co., and conducted exclusively in the interests of the medical profession. $3.00 per annum. Dr. George M. Gould and Dr. Agustus A. Eshner are the chief editors. It is not only well edited, and its selections carefully condensed, but it takes the new departure in refusing the advertisements of "secret" and "proprietary" preparations. Some restraint is evidently demanded upon the use many proprietors of quack remedies make of the respectable medical and church press.

"CONSIDER what you have in the smallest library: a company of the wisest and wittiest men that could be picked out of all civilized countries in a thousand years have set in best order the results of their learning and wisdom. The men themselves were hid and inaccessible, solitary, impatient of interruption, fenced in by etiquette; but the thought which they did not uncover to their bosom friend is here written out in transparent words to us, the strangers of another age.'

THE Publishers' Syndicate of Ontario, 88 Yonge St., Toronto, meets a want of the profession in supplying not only dental literature but general literature, at from twenty-five to fifty per cent. saving on the cost. It is worth while writing for information. Mr. A. Hirst, 434 St. Dominique St., Montreal, is the agent for Quebec Province.

TEMPERANCE A PHYSIOLOGICAL NECESSITY.—In like manner the influence of all drugs which affect the nervous system must be in the direction of disintegration. The healthy mind stands in clear and normal relations with Nature. It feels pain as pain. It feels action as pleasure. The drug which conceals pain or gives false pleasure when pleasure does not exist, forces a lie upon the nervous system. The drug which disposes to reverie rather than to work, which makes us feel well when we are not well, destroys the sanity of life. All stimulants, narcotics, tonics, which affect the nervous system in whatever way, reduce the truthfulness of sensation, thought, and action. Toward insanity all such influences lead ; and their effect, slight though it be, is of the same nature as mania. The man who would see clearly, think truthfully, and act effectively, must avoid them all. Emergency aside, he cannot safely force upon his nervous system even the smallest falsehood. And here lies the one great unanswerable argument for total abstinence ; not abstinence from alcohol alone, but from all nerve poisons and emotional excesses.—*From The Evolution of the Mind, by David S. Jordan, in Appletons' Popular Science Monthly for February.*

Post-Card Dots.

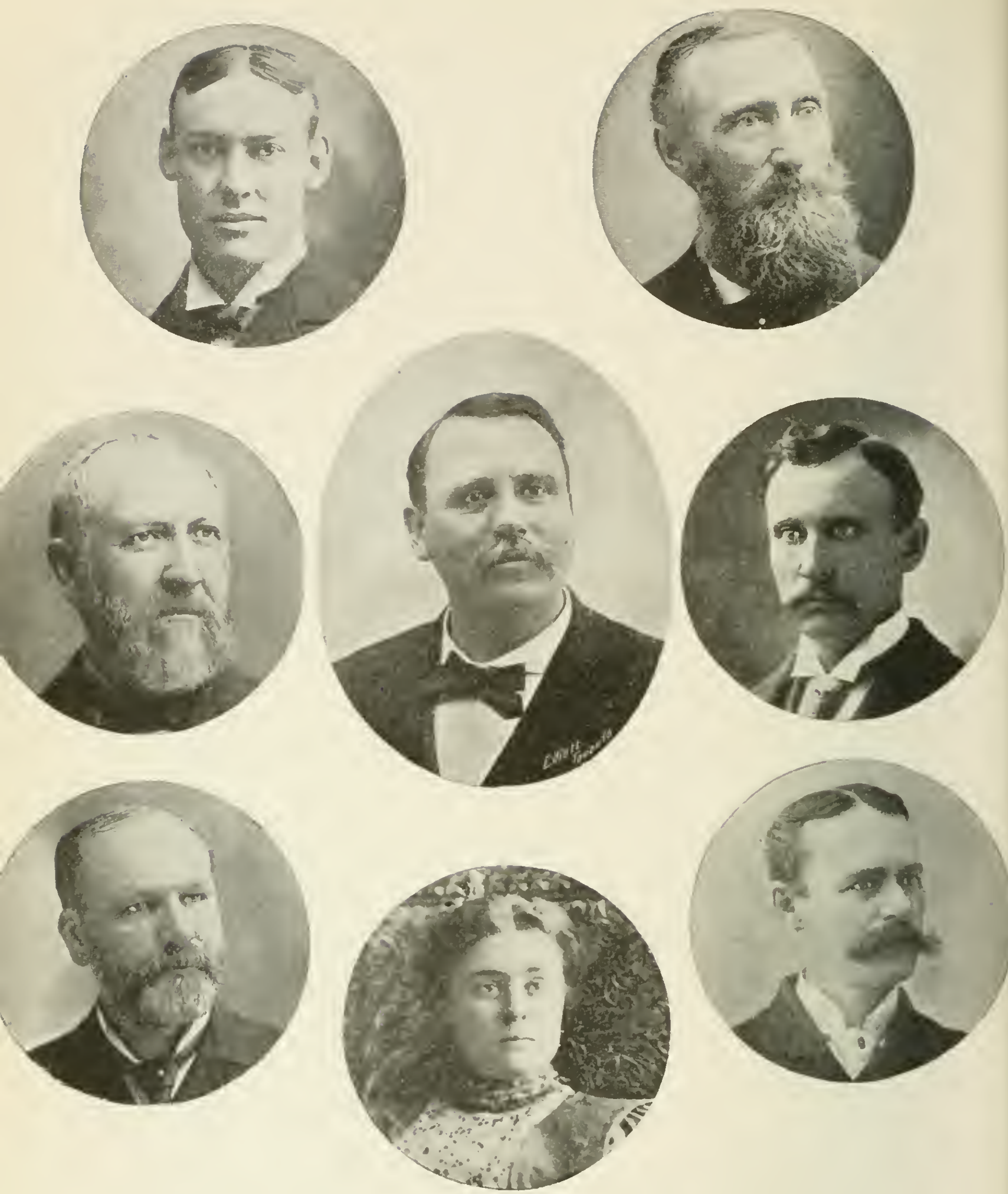
1. WHAT is the Licence fee in Quebec Province? (T.)
$60.00.

2. WAS there ever a set of teeth made for a lower animal? (R.F.)
Somewhere we read of a set made for a horse. Lots of donkeys, who should have had their teeth filled, wear them. At the Kennel Show in London, England, a little aged dog was exhibited, wearing a full upper and lower set made for him by his owner, a dentist. They are quite as useful as ornamental.

3. WANTED—a convenient way of keeping carbolic acid, etc., on the bracket. (M. A.)
Fill a wide-mouthed, flat-bottomed bottle with cotton-wool. Saturate it with as much of any solution you use. Dip in a pellet, and you can get all you want without fear of spilling. If the bottle upsets, nothing spills.

4. WHO suggested quills for tooth-picks? (B. W. D.)
Martial.—See Lib. XIV., Epgr. 22.

5. WHO was the first to scarify the gums for difficult dentition?
Ambrose Paré. His first experiment was upon his own son.



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Dr. K. L. Cleaves, Montpelier,
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Corresponding Secretary.

Dominion Dental Journal

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Original Communications.

RETIRING PRESIDENT'S ADDRESS.—VERMONT STATE DENTAL SOCIETY.

By DR. C. S. CAMPBELL, St. Albans, Vt.

It would not be my purpose to make a lengthy or scientific address at this time, even if I were able to do so, but I would like to say a few words to you on the value of our conventions.

To attain success and approximate toward perfection in any enterprise or undertaking, it is almost indispensable that there should be systematic, concentrated and united effort. It is as true to-day as ever it was, and will apply as well to our dental interests as it will to our political relations one to another.

Let us notice briefly the workings of the political convention.

Political parties assemble in convention, define their position and declare their intentions as to great principles and interests, affecting or likely to affect the weal or woe of their countrymen. Committees are appointed to draft "Resolutions," which are accepted by the body appointing the committee, made public through the press, approved and endorsed by sub-conventions, clear down to the primaries, and at last the report of a committee of not more than half a dozen men becomes the accepted issue that is to agitate, excite and convulse a whole nation.

The same sentiment expressed in the precise language, and by the very men constituting the committee, without the endorsement of a convention or association, would often be powerless to even agitate or excite.

It is the conventional prestige or power, not the individual expression, that gives the sentiment force and efficiency. Paul, the most learned and eloquent of all the Apostles, knew full well the strength of association. Hence the exhortation, "Forget not the assembling of yourselves together."

The makers of the early history of our country well understood this fact, as witness the number of conventions which were held by the colonists before the Declaration of Independence was finally promulgated, and our land became what it is to-day, a model of Republican Government.

John Brown waged war upon the institution of slavery, and so zealous was he in his work and fixed in his convictions, that he sealed his devotion to the cause with the sacrifice of his life. Yet the institution survived, and men continued to be bought and sold as articles of merchandise until, in convention assembled, it was "Resolved that to hold chattels in humanity was a stain upon our nationality and a libel upon our independence." The convention willed it, and the fetters fell from four million slaves.

This is an age of association, and it is this associated effort that has fostered scientific investigation, raised the standard of morality and of education, and stimulated our national literature.

We have the Medical Association, where our learned Doctors assemble and endeavor to solve the problem of how much medicine a man can take and still live.

We have the Bar Association, a highly-educated body of men, who have burned the midnight oil in perusing Blackstone, searching authorities, and preparing briefs, but whose ingenuity and skill is most apparent in bills of fees—always without a brief.

Teachers' Associations, *where* the *why* and *wherefore* is made entirely plain to the speaker, if not quite so to the audience; and so on, there are associations without number all down the line, from that representing the highest art, to the Newsboys' and Street Cleaners' associations.

That there is great good accomplished by this associated work is manifest to all. Now, how are we, as a Dental Association, to get the greatest amount of good from our meetings? Our most earnest and progressive workers are found in our societies, and yet it is a matter of regret that there are still those outside, who, if once interested, would make very active and valuable members. Let us make it a personal matter to see at least that all such receive a cordial invitation to join us.

As our profession grows older and the need of better legislation for its protection becomes apparent, let us see to it that our appeals for such legislation are made in the name of our society, and if necessary signed by each of its members. We shall then find that it is not a difficult matter to obtain such laws as are needed for the protection of the public and the profession.

I was impressed by some suggestions made by Dr. Beadles, of the Virginia State Dental Society. His idea is not to have *many* clinics, but *good* ones by a few operators of known ability and experience. To have only one clinic in progress at one time, and that with the society in session and the officers in their places.

For this a raised platform should be provided near the president's seat for an operating chair. With a free use of the blackboard, and the patient in the chair, the operator would have no difficulty in making clear to all what he intended to do. Being no longer students, such an explanation or illustration is often all that is needed to make all those present able to go home and perform the operation. By this method the operator would have the attention of the entire association and be stimulated to do his best, and each one of the audience have an equal chance of seeing his work.

Dr. Beadles thought our best men would then be more willing to accept invitations to give clinics. Many of our members attended the meetings for this alone, and we know how unsatisfactory clinics are under the present method, both to the operator and to the observer, and it seems to me the plan is worthy of a trial.

Of course, if this plan should be adopted it would at once be manifest that more time should be allotted to the meetings, and this is a matter upon which some of us have spent considerable thought.

We really have not one *whole* day for effective work, the first evening and the second morning being almost entirely devoted to the routine business of the convention, and our custom has devoted the other evening to social enjoyment in our annual banquet. I know many of us feel that we cannot be away from our offices much longer, but do you think we, or our practice would lose anything thereby? Are we not most of us narrowing our lives down to the limits of our own office too much? Is it not true that few of us take the vacation we ought to for our own good; that we, in common with business men, and men of other professions, are leaving most of our social duties to the women of our households, thus forcing upon them, in addition to the thousand and one petty cares which naturally fall to the home-makers of our land, some burdens which justly belong to us. Too much of the social and reformatory work of the day is left to them, which they are bravely struggling with in their various societies, until they have been aptly styled the "Unquiet Sex," by a recent writer in a popular magazine, and we and the M.D.'s are kept busy trying to patch up the resultant quantity of worn out nerves; and, according to the same writer quoted above, the future of our race is seriously menaced. At the present rate of burning the candle of life at both ends, a beautiful and serene old age, such as we have witnessed in one to whom I would like to offer in closing this slight tribute of memory, will be unknown to the next generation. I refer to Mrs. Dr. Lewis, of Burlington, whose gentle presence among the ladies we miss to-night, for since our last meeting she has been called home. I think Mrs. Lewis had attended most of our meetings since the pleasant custom of having the ladies with us was established, even braving the fatigue of the trip to Montreal, and I am sure her presence has always been like a benediction to the younger members. While we sympathize deeply with Dr. Lewis in his loss of a life-long helpmate and companion, we must also congratulate him upon the memories of gracious womanhood, of which nothing can rob him.

Such a calm and peaceful journey on the down hill side of life is what we are desiring for our wives and daughters, and that they may have it, let us bear our share of social and ethical duties, and not only as an association, but as individual members of our chosen profession, declare for the *best* on all of the burning questions of the day, at the same time that we are earnestly striving to reach the dentist's ideal ; the time when the dental office shall be shorn of its terrors, when extraction and artifical teeth shall be unknown because we shall have mastered the theory of decay, and painful and protracted operations shall be known no more forever, because such operations as are necessary shall be painless in fact as well as in theory.

THE COUNTRY DENTIST.*

By Dr. J. A. Pearson, Barton, Vt.

One of the questions which confront the country dentist is how to make his practice pay him. If he has entered the profession with the one idea that he can get a living easier than in some other way and looks at the business wholly from a commercial standpoint, he is likely to be one it is not pleasant to practise beside.

The sphere of the country dentist to a great extent is that of a pioneer or missionary. When work is being done for less than good conscientious honest work can reasonably be done for, the quality of the work is quite likely to deteriorate with the price. I can see no reason why the country dentist should not and can not receive a proper remuneration for his services, provided he is up with the times and the community in which he is located appreciates and understands the advantages derived from dentistry. It must be borne in mind, however, that many of us are practising in localities so situated we seldom receive a call from another dentist, or come in contact with others in the profession, thus losing the stimulus generated by social intercourse and interchange of thought with one another, therefore we must make a greater effort to keep in touch with the times or we will fall short of what we might be. It is discouraging to plod along year after year in a community which, as a whole, are ignorant of the advantages derived from our profession, only so far as to relieve them of an aching tooth by extracting it when it should be saved. The only question asked when told they should be saved by filling is what it will cost, and if we will warrant them to last as long as they live, if not they might as well have them out now as ever. If, when they bring a child to have the six year old molars extracted, we tell them they are permanent teeth and should be saved, they emphatically inform us we are mistaken, they are certainly temporary teeth because they had theirs out and have others in their place. They go from our office fully convinced we do not understand our business, or we are trying to get their hard-earned money by filling temporary teeth, not realizing if they were temporary teeth we were conferring on the child one of the greatest of blessings. So they go from our office feeling glad they have not let us fool them, and we are left to ponder and wonder.

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* Read before Vermont State Dental Society.

I do not wish to convey the idea that all of our patients are like the above, for we have some very intelligent patients, who fully appreciate our efforts to serve them; and, who does not appreciate a good patient? But far too many of our patients are so ignorant of the first principles and benefits derived from dentistry, we are sometimes discouraged in our efforts to do our best for them. Perhaps some of you who have a good practice among people that understand the advantages derived from the proper care of the teeth, will say, "Let them go." We cannot afford to, for we need their business and they would want our work as well as do your patients yours, did they understand the benefits derived from it. There should be an effort made to educate the masses in this line and show them the importance of the teeth to perfect health. Were the people as a whole as well informed on this subject as they are on the general questions of the day, there is not one-half dentists enough in Vermont to supply the demands for work at good prices. I think our local papers should be induced to publish short articles on the importance of the teeth and their care. It is very slow business for the dentist to educate the people, coming in contact with comparatively few of a community, and talking with them a few minutes when they are half credulous, wondering if we are really telling the truth, or are after the work. There is no reason, with the dental journals published, why the country dentist, with his usual leisure hours, should not be well informed on what is going on in the profession. There are many good reasons why all the dentists in Vermont should become members and contributors to the Vermont State Dental Society; their annual dues are needed to carry on the work of the society, so the Executive Committee may get the best talent possible as demonstrators and essayists at our annual meetings. It is the only Vermont State Dental Society, and is recognized as an important factor by our Legislature. For our own benefit we should be identified with a society which is recognized by the leading dental societies of the

United States. By attending its meetings, we come in contact and become personally acquainted with some of the best men in the profession, men whom we should consider it an honor to know. Often we become intimately acquainted with our neighboring competitors whom we have never met, and only know them through some of their disaffected patients, who portray them to be wretches unworthy of consideration ; but when we see them face to face we learn they are men, whole-souled, honest and glad to aid us in any way they can. Had it not been for the Vermont State Dental Society, we would not have had a Vermont Dental Law, for at least several years after it was passed, if at all. Had we not had a State law, the country places would have been over-run with tramp dentists, cutting down prices so it would have made it impossible for any one to have done honest work and received a living price for it. All honor to the founders of the society. Well did they lay the foundation. May its shadow never grow less. Some of them are with us to-day. Long may they live. Well do I remember the kind remarks and advice ofsome of them, although I never became personally acquaintedwith many. I remember with gratitude and pleasure helpful things said to me by some, especially Dr. Lewis and the much lamented Dr. O. P. Forbush. It has been my experience with the members of this Society, that they have been always as willing to give advice and counsel as we were to receive it. I think they should know their kindness is appreciated I believe the country dentists are trying to do honest work, and a great deal of their work will compare favorably with any work done. I believe amalgam and gutta percha are a boon to the country dentist, enabling him to do good serviceable work at the prices he is obliged to charge. There is no reason why the country dentist should not, or cannot be just as thorough as if he was practising in a city, and sometimes more so, for often he can take all the time he wishes, and may be he had better, for if done too quickly the patients may think he is overcharging them. We should not be

Dr. H. A. Baker, Boston.

afraid to acknowledge it, when we cannot do a class of work and do it right. We should be frank and honest with our patients, and if they wish for a class of work we do not or cannot do, tell them so, and assist them to get what they want by sending them to some reliable dentist, who does that class of work; in doing this we simply act the part of honest men, and do not degrade ourselves in the class of work we do. There should be such an interchange of courtesies and acquaintances that we can send patients to reliable honest men for such work.

DENTAL ETHICS.*

By Dr. E. E. McGovern, Vergennes, Vermont.

Several years ago. when I was appointed one of a committee to revise our By-laws and Code of Ethics, I had no idea that I should again be called upon to discuss the subject, and certainly would not do so now were it not for an urgent request from the Chairman of your Executive Committee, to whose instruction I owe my earliest ideas of dental ethics.

Were I to enter into a discussion of the particulars of our every day practice, I should weary you in repeating what you already know; therefore, I shall confine myself to a general view of the subject. In arranging a code, your committee were filled with the enthusiasm of a new undertaking, and endeavored to fix a standard sufficiently high to dignify a profession still young in years, and with sufficient latitude to please the most liberal. Whatever our measure of success, your convention accepted our work, and the code, as then adopted, has been our standard since.

While I would not take the position of a carping critic, it seems to me pertinent, in this twenty-first year of our organization, to ask, Have we maintained that standard? Have we exceeded that latitude? A brief review may be in order here. That code seems to me to consider our duty to ourselves, our duty to each other, our duty to our patients. Our duty to ourselves demands that we make the most of our environment. The varying circumstances surrounding each one must make individual and personal, rather than general, rules necessary. We must all agree that a most important factor in our success, and the first duty we owe ourselves is the securing of a good general education. Unfortunately, until within a few years, this has not been considered strictly necessary to the making of a good dentist. Even some of our best colleges matriculated after very superficial examinations. It is gratifying to know that this matter has been greatly improved, and to-day our best colleges require a fair preliminary examination before matriculation. In some States an examination before a State Board of Regents is required, which is a step in the right direction. We desire to be classed as professional men, we must therefore fit ourselves to meet the requirements demanded of professional men in other lines. The title "Doctor," as applied to a doctor of medicine, is practically a distinctive mark of scholarly attainment. While it certainly is not my design to lower the position we occupy by courtesy, if not always by education, yet I cannot help asking, How many of us are fully entitled to that much coveted and jealously-guarded title, Doctor? It may be remarked, and with some justice, too, that we have in our profession men who are excellent dentists and yet are far from scholarly. This may be true, but, gentlemen, to bring our profession up to the high standard for which we all hope, our ranks must be recruited by young men of educational as well as dental attainment.

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* Read before Vermont State Dental Society.

I do not need to remind you, gentlemen, that there is no profession so trying to the nerves as that of dentistry, requiring, as it does, so much that must be classed as surgical work. Sixty years ago, before the use of anæsthetics, surgeons sometimes refused to perform operations that were considered best for the patient, simply because they could not bring themselves to endure the sight of the suffering they must cause. The dentist's work, much of it, causes so much suffering that he must have good nerve to be able to forget it sufficiently to do thorough work, therefore an important duty is the care of our health. A discussion of the way in which that duty can be fulfilled would exceed the limits of a paper like this. Suffice it to quote from Sec. 3: "The dentist should be temperate in all things, keeping both mind and body in the best possible health, that his patients may have the benefit of that clearness of judgment and skill which is their right." The dentist, if any one, should deserve and claim the title of gentleman; there is scarcely any subject in regard to which the general public shows such deplorable ignorance as in that of dentistry, yet each one must be met with politeness and patience, attention and consideration, all characteristics of a gentleman, if success is desired. So true is this that I unhesitatingly affirm, when I hear of a thoroughly successful dentist, he is a true gentleman. Our duty to each other seems an appropriate theme to consider here, since in that case any lapse from gentlemanly conduct cannot be excused on the ground of dealing with ignorance. It is the most natural thing in life for man to be more or less selfish—this, I am sorry to admit, is as prominently developed in the dentist as in men in other walks of life; but, while we are naturally selfish, there is no reason why we cannot teach ourselves to be charitable and just. We are all striving to reach the same goal, but let us insist on fair play, as much as when we were boys. The poet who wrote,

"Man wants but little here below,
Nor wants that little long,"

lived before the time of the modern dentist. He wants a great deal, and that as well as professional fame is what he is striving for. Doctors of medicine agree upon a schedule of rates, reasonable for the place in which they live, and he who deviates therefrom without good and sufficient reason, forfeits the esteem of his professional brothers. Will not the same rule hold good in our profession as well? Are we, when consulted by the patient of a brother dentist, sufficiently careful not to criticise his treatment? Do we put ourselves in his place and speak of him as we would have him speak of us? If we could sometimes forget our individual selfish aims in that larger *esprit de corps*, we could do much to elevate the standing of our profession. As we come to consider our duty to our patients, we think surely this should have been considered first, for the others are of necessity secondary to that—the means toward the end. The duty we owe our patients is self-evident to every practitioner. In the first place, our offices should be made comfortable and attractive to a degree commensurate with our circumstances and convenience, with as little display of instruments and appliances as possible. Our reception room should be comfortable and home-like, free from disagreeable odors or other disturbing elements, and should be, as far as practicable, separate from the operating room. The operating room, which is the "Star Chamber" of dentistry, should be supplied with all conveniences in the way of instruments and appliances necessary to the performance of the different operations which we are called upon to perform. In this connection I deem it of the utmost importance that we keep our instruments not only thoroughly disinfected but they should be well assorted, sharp and keen. Much of the dire dread and accompanying pain can be alleviated by using well adapted sharp instruments. It has been remarked, and with some truth, that the best cataphoresis is a steady hand and a sharp instrument. We owe our patients immaculate cleanliness. In person or surroundings nothing should appear to offend the most sensitive; even in the finger tips, no suggestion of bacteriological deposit should exist.

I quote from a recent journal as expressing clearly my own views: "Meet your patient as a friend, cordially, familiarly, cheerily. Easy simplicity, social suavity, and professional courtesy must be instinctive, spontaneous, hearty. Our success in receiving our patients is half the battle. We must have the dignity of a man of business, the reserve of a professional, and the polish of a gentleman, yet be as kind, gentle and tender-hearted as a child." I am convinced that one who could meet these requirements has most of the characteristics of the ideal dentist, yet we have in our ranks many whose earnest efforts to reach that ideal have met with a large measure of success. What boundless patience with ignorance, what gentleness with suffering, what courtesy to meet rudeness, what firmness and decision with the timid, what forgetfulness of self are required, only we who go the weary round each day can know. We are confronted daily with the grossest ignorance of anything pertaining to dentistry or even to decent cleanliness. It is scarcely reasonable to expect in our patients any great knowledge of the principles of dentistry, and we are or should be always ready and glad to explain to willing listeners, but those who come with preconceived ideas of what should be done, and, right or wrong accept no denial, tax our patience to the utmost. It is hard for such people to believe that pride in honest work is a stronger power than the mighty dollar. While I would be the last to say anything disparaging of woman, whose desire to make herself attractive-looking has added materially to our bank account, I still look regretfully back upon the times when I have put the smallest, whitest, prettiest teeth where nature had originally put far different dentures, just because, "When a woman will, she will, you may depend on't ; and when she wont, she wont, and there's an end on't."

Gentlemen, let us make it an important point in our ethical code that, before the duty of pleasing our patients comes the duty of doing good, honest work. Is my ethical code old-fogeyish, somewhat behind the times, out of date? Show me a better standard and I will adopt it. For I agree with Bro. Remus, when he says: "Dar aint no wuss victim of misplaced confidence dan the man who gets to thinking he knows everything." Perhaps Prof. Thompson put it better. when he used to tell his students. "No one of us is quite infallible, not even the youngest." Every year brings new ideas and new inventions that are indeed a help to our profession, but let us be sure they are right before we accept them. I will gladly mount the wheel of progress with any one of you, but we have all seen many a scorcher come to grief, and while our wheel goes swiftly and well over the smooth road, there will be many rough spots and many a hard climb, where we will be glad to mount again the good old steed that served our fathers so well.

REPRODUCTION OF TISSUE.*

By G. LENOX CURTIS, M.D.

Patient—Mr. X.—— aged 55, Montreal, 18th March, 1896. History of case referred to me by Dr. W. Geo. Beers, Montreal.

Twenty years ago patient contracted syphilis, for which he was apparently successfully treated. After this he was in robust health until seven years ago, when suddenly the left side of his face became badly swollen, and soon after a discharge of pus flowed from the nose and throat; his breath was extremely offensive and nauseating; throat sore with annoying cough which led to bronchitis, which became chronic. From time to time, after a lapse of several months, the swelling in the face would recur, the discharge from the nose and offensive breath being constant, general discomfort and loss of vitality followed until January of 1896 when his condition became debilitated, although under the constant supervision of his physician, when he was referred to Dr. W. Geo. Beers to have some troublesome teeth extracted. The superior left incisors and cuspid were removed, being only attached to the gum. About this time his cough became exceedingly troublesome, his bronchial symptoms exaggerated, and general health bad.

Dr. Beers detected dead bone in the jaw of considerable magnitude, to which he called the attention of Dr. Craik, Mr. X.'s family physician, and advised a consultation with me. Dr. Beers douched the wound daily for six weeks, during which time the patient's general health somewhat improved.

Examination took place March 18th, 1896. I found cough harsh, expectoration profuse, appetite very poor, patient extremely debilitated, showing signs of long suffering and the effect of pus upon the system; exaggerated signs of pyæmia not present, yet sufficiently to show long suffering from blood poisoning. The left side of face was slightly swollen, which patient stated it had been for several years; there was a large opening in the floor of the nares, extending back to the soft palate, through which pus exuded and the rough necrosed bone could be readily detected. The area involved, was from the base of the molar to the second bicuspid to the median line, and as far back as the soft palate, involving the entire bony structure. The odor from the breath was sickening, caused by the extensive discharge of pus from the gums and nose, the pus being black and thin in character, the first superior bicuspid, black, dead and abscessed, the second bicuspid, and wisdom tooth, vital and in good condition, the first and second molars missing and with gums healed, the mucous membrane hypertrophied, congested, and of purple hue ; the color around the wisdom tooth normal. The probe passed in the wound where the teeth had been extracted passed back into the throat and on either side of the sequestrum ; all the bone on this side of the jaw, anterior to the second bicuspid was destroyed, although the walls of the antrum were not penetrated. The left nares was nearly closed, due to a deflection of the septum, with a large nasal spur, and pressure on the periosteum in the region of the inferior turbinate, with a well defined line of demarkation formed around the sequestrum.

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* Read before the Vermont State Dental Society.

Operation—The patient was given ether by Dr. J. G. McCarthy and I was assisted by Dr. Beers ; Mr. X.'s physician being present. The dead bicuspid was extracted, a denuder passed between the dead and living bone to thoroughly free the periosteum ; then with a heavy pair of forceps the sequestrum was firmly grasped, gradually loosened and removed ; this was followed by a fierce gush of blood, fully one pint in all, the vessels having disgorged themselves in about a minute, when the entire surface of the wound was curetted, granulations and debris removed, the hæmorrhage being checked by hot water, the wound was sterilized with hydrogen peroxide and firmly packed with iodoform gauze. Time of operation ten minutes: time between first inhalation of ether until patient was conscious, twenty minutes. Dr. Craik expressed himself as being highly gratified with the operation, and thanked me for allowing him to see it, and said it was the cleanest operation he had ever seen on the jaw, and the only one without cutting through the face. The patient made rapid recovery, no fever or untoward symptoms following the operation.

The case was redressed on second day, and on Dr. Beers' strong recommendation, I used for the first time "Pheno-Banum" a preparation composed of carbolic acid, Balsams of Peru, Tolu and Benzoin, which was supplied by Dr. Henry Ievers, and found it to be of much value in retaining the dressing in place. The case was seen by me for three days in succession, and redressed with the same preparation, the effect of which was very marked, as healthy granulation had set up under its influence on the third day, there being no pain or inflammation when I left the case in charge of Dr. Beers, who continued the same treatment ; the wound rapidly healed, new tissue filling in except in a very small space between gum and nares, through which the probe could be passed, the bone having been very nicely reproduced.

On May 29th, 1896, Mr. X. came to my office in New York for correction of nasal stenosis ; I took away a large spur from the left side of the septum, and removed most of the left inferior turbinate, also curetted and treated the opening in floor of nares, which healed kindly and completely closed. The patient was under treatment until June 9th when he returned to his home in good condition and applied to Dr. Beers for an artificial denture to restore the contour of the face and missing teeth. I have since learned that Mr. X. is completely restored to health. This is another example of reproduction under certain treatment.

7 West 58th St., New York.

OUR PORTRAITS.

Dr. H. A. Baker, now resident in Boston, was the father of the Vermont State Dental Society.

Dr. James Lewis began dentistry in July, 1842, fifty-six years ago, with a brother, in Burlington. His reminiscences of the primitive days in the profession would make a most interesting volume. There was only the one dental college of Baltimore at the time he began, and after practising for twenty-five years he attended the Pennsylvania Dental College, and there graduated. Afterwards he graduated at the Jefferson Medical College in Philadelphia. There were no gum teeth in use when he first began. The two first full sets he constructed he used spiral springs to retain them in place. Anæsthetics were then unknown. The marvellous revolution in theory and practice finds the doctor in full active interest, practising as usual from day to day.

Dr. Hodge was born in Gilmantown, New Hampshire, in 1847. He has held all the offices in the Vermont State Society, excepting treasurer and secretary, and was one of its charter members. He is an efficient member of the Examining Board, and very zealous in promoting not only the scientific progress of the profession, but that high ethical spirit, without which he believes dentists have no claim to be considered one of the liberal and learned professions.

Dr. W. H. Munsell has been Treasurer of the Society for fifteen years, and manages "the sinews of war" with success and financial ability. The doctor is a very attentive member of the Society, and we have every belief that if he had an opportunity of controlling the Treasurership of the State, he has the special gifts to fatten the public funds for the public benefit. For some years he lived in Canada. His services to the Vermont State Dental Society are gratefully appreciated by the members.

VERMONT EXAMINING BOARD.

Dr. A. J. Parker, Bellaws Falls.
Dr. S. D. Hodge, Burlington.
Dr. R. M. Chase, Bethel.
Dr. G. F. Cheney, St. Johnsbury.
Dr. Thomas Mound, Rutland.

DR. R. M. CHASE was born in South Royalton, Vt., in 1854. At the age of eighteen he began the study of dentistry. In 1876 he graduated in the Boston Dental College. In 1890 he graduated as M.D. in the Baltimore Medical College, practising both professions. Has been a member of the State Board since 1888, and has always taken an active interest in the Society—of which he was one of the charter members and a former president. As a citizen he is identified with the Bethel Electric Light and Power Co. as its President. He was grand juror, and on the School Board for several years. The doctor is one of the live public as well as professional men of his town.

DR. THOS. MOUND, the efficient Secretary, was born in Leicester, Vt., in 1853, and was elected to his present office in 1883, and has ever since held it, so that he is a State encyclopedia of dental matters. He is one of the quiet appearing members, who does a vast amount of work for the profession in his State which is not half known.

DR. GEO. F. CHENEY was born in Lunenburg, Vt. He occupied the position of President of the State Society, and also of the old New England Dental Society, and is at present the Secretary of the State Board. He graduated at the Philadelphia Dental College in 1883, and has been one of the most faithful attendants at the Society meetings. The doctor is a Mason, being a Knight Templar, and like all the Vermonters, he acts " on the square."

DR. J. A. ROBINSON commenced the fifteenth year of his connection with the Society the first day of the meeting this year. He served on the Executive Committee, and was Chairman at the time of the Montreal Convention ; Second Vice, 1896-97 ; First Vice, 1897-98, and was this year elected President. He has been a most active member, and in the arduous duties of Chairman of the Executive Committee he rendered valuable service to the Society.

DR. A. J. PARKER was born at Dixville, Province of Quebec, in 1858. He graduated at the Philadelphia Dental College, also at the Medical College of Chicago, and has held all the offices in the Society and has had three terms of two years each on the Board as State Examiner. He takes an interest in local matters in his town and served one term on the Board of Health.

DR. C. S. CAMPBELL, the past President, may congratulate himself on his retirement, having held office and presided as President at the largest meeting ever held of the Society. His address, which appears elsewhere, speaks for itself.

Dr. K. L. Cleaves was born in Cherryfield, Maine, in 1867. He graduated at the Philadelphia Dental College in 1890; held office as Chairman of the Executive Committee last year, and this year was chosen as First Vice-President. Anyone looking at his genial countenance can see that he is a bright and promising young man, and having recently entered into a partnership "for better or worse," he is as happy as the day is long.

Dr. Henry Turrill was born in Shoreham. In the early days of the Society, the doctor came within two or three votes of the presidency. He was the active Chairman of the last Executive Committee, and this year was elected in rotation, Second Vice, so that we may hope to see the genial doctor in the presidential chair the year after next. He is devoted to his business and could not be tempted to accept any public office.

Miss (Dr.) Grace Bosworth was born in Rutland, and under the tuition of Dr. Mound attained great efficiency, passed her examinations before the Board and obtained her license. She was elected Corresponding Secretary of the Society in 1896, and it is quite needless to say that her personal as well as professional charms entitle her to the respect and popularity she enjoys.

Dr. G. W. Hoffman is a terror to law-breakers in his capacity as State Prosecutor. The position involves arduous and not pleasant duties, and is certainly a sacrifice on the part of any member who accepts it. In fact, it is the important legal office in the Society, and the members realize the fact, that they are particularly fortunate in having in the position, a gentleman who is fully competent to make law-breakers shake in their shoes, and qualify or skeedaddle.

Mr. W. H. Towne, of the S. S. White Co., has always shown his pleasant countenance at the meetings, and participated in the proceedings with much gratification to the members. Mr. Towne is a man of great moral force of character, and impresses his friends with his personality, as one who is superior to the trivialities of life which mars the unity and harmony of mankind. As a thinker and a speaker, he is delightful, and we are very glad to include his portrait in the list of the friends of the Vermont State Dental Society.

Proceedings of Dental Societies.

VERMONT STATE DENTAL SOCIETY.

(OFFICIAL REPORT.)

The twenty-second annual meeting of the Vermont State Dental Society opened at Hotel Berwick, Rutland, March 16th, 1898. The meeting was called to order by the President, Dr. C. S. Campbell, of St. Albans, at 7.45 p.m.

Rev. Theodore B. Foster offered prayer. Dr. Thomas Mound, of Rutland, Recording Secretary, read the minutes of the last meeting, held at Montpelier.

Dr. Geo. F. Cheney, of St. Johnsbury, Secretary of the Board of Dental Examiners, reported for the Examining Board. He said that during the year ten persons had been licensed to practise dentistry in the State, and three temporary permits had been granted.

Dr. S. D. Hodge, of Burlington, President of the Board, reported on some proposed changes in the dental law. He said that it was proposed to make every candidate appear before the Board for examination and pay a fee of ten dollars for a license. The primary object of the change in the law was to treat alike all who intend to practise dentistry in the State. The report was accepted and adopted ; and it was also moved and carried that every member of the Society should pledge himself to explain to his representative the reason for the proposed changes.

Dr. H. Turrill, of Rutland, Chairman of the Executive Committee, had no special report to make.

Treasurer Dr. W. H. Munsell, of Wells River, stated that the receipts of the Society at the last meeting were $114 ; expenses, $110.67, leaving a balance in the treasury of $3.33. He recommended an assessment of $2 per member to meet the expenses of the present meeting, and the Society voted that amount.

Hon. Percival W. Clement, Mayor, welcomed the members.

Dr. W. Geo. Beers, Montreal, responded to address of welcome.

Dr. J. A. Robinson, Morrisville, 1st Vice-President, took the chair.

On motion of Dr. Campbell, a vote of thanks was extended to the Mayor and Rev. Theodore B. Foster, for their words of welcome.

The President, Dr. Campbell, then read his address. (See p. 111.)

A committee composed of Drs. W. H. Wright, S. D. Hodge, R. M. Chase, was appointed by President Campbell to draft resolutions on the death of Mrs. James Lewis, wife of Dr. Lewis, Burlington.

The first paper of the evening was read by Dr. J. A. Pearsons, of Barton, who spoke on the "Country Dentist." (See page 114.)

"Dental Ethics," by Dr. E. E. McGovern, of Vergennes, was then read. (See page 117.)

Dr. G. P. Wicksell, Boston; Dr. G. A. Young, Concord, N.H.; and Mr. W. H. Towne, Boston; followed in a discussion of this topic.

Dr. R. M. Chase, of Bethel, presented a case of office practice. He had casts and photographs of the jaw of H. M. Dufur, who was shot in the mouth at White River Junction a year or more ago.

Dr. M. L. Rhien, New York City, told about a similar case, and spoke in detail of the method of treatment which he had adopted.

Before the meeting adjourned the following persons were admitted to membership of the Society: Drs. Geo. O. Mitchell, of St. Albans; E. G. Stevens, Barton Landing; A. W. Soule, St. Albans.

Thursday morning at 9.30 o'clock a party of eighty people, composed of dentists and their friends, were taken to Proctor by a special train, where they visited the marble quarries and mills; returning they reached Rutland at noon. The party walked from the train to Memorial Hall, where a group picture was taken by Photographer Emery.

Thursday afternoon, from 1.30 to 4.30, was devoted to clinics and demonstrations. Dr. M. L. Rhien, of New York City, exhibited models of bridge work and gave explanations regarding them. Dr. G. A. Young, Concord, N.H., explained his method of making a partial plate, and also gave a talk on "Soft Gold." Dr. G. P. Wicksell, of Boston, gave a clinic on filling with crystalloid gold, and Dr. Belyea, Brookline, Mass., explained his method of filling crowns.

The Society was called to order by President Campbell at 4.30 p.m. to listen to a paper by Dr. Rhien on "Rational Treatment of the Dental Pulp," which was followed by discussion.

At the invitation of Mr. E. C. Tuttle, State Prison Director, a delegation of dentists and their wives visited the House of Correction. The party were shown through the institution and were present at the daily drill of the inmates.

Mrs. (Dr.) Turrill gave a reception to the wives of the dentists and their lady friends, from three to five o'clock, at Dr. Turrill's home on South Main Street.

The evening was devoted to a banquet tendered to the members of the Dental Association of the Province of Quebec, Dr. W. George Beers, of Montreal, acting as toastmaster. Dr. James Lewis, of Burlington, responded to the toast "Our Guests." The next toast was "The President of the United States, and the Queen of England," by the Toastmaster. "The Vermont State Dental Society," by Dr. Hodge, of Burlington. "The Dental Profession" was the subject of the toast of Dr. M. L. Rhien, New York. Dr. R. M. Chase, of Bethel, spoke on the "Medical Profession." Dr. E. O. Blanchard, of Randolph, responded to the toast "The Ladies." The next speaker was P. M. Meldon, on the "Legal Profession." Toastmaster Dr. Beers then proposed the toast of the "British Empire and the United States." Mr. W. H. Towne replied. Dr. Milliken, of Boston, replied to the "Dental Trade." After the banquet the party adjourned to the hall upstairs, where a concert was given.

FRIDAY MORNING TEN O'CLOCK.

Friday morning session was called to order by Dr. Campbell.

The committee, consisting of Drs. Wright, Hodge and Chase presented resolutions on the death of Mrs. (Dr.) Lewis, wife of the first president, which were adopted. Following are the resolutions:

"Whereas, the providence of God has deemed it proper to remove from our midst the devoted wife of our first president, Dr. James Lewis, one who was also a constant friend of our Society, and widely known for her goodness and godliness of character, be it resolved, that the sincere sympathy of the members of the Vermont State Dental Society be tendered to Dr. Lewis in his irreparable affliction, a loss in which we personally and professionally share.

"W. H. WRIGHT,
"S. D. HODGE, } *Committee.*"
"R. M. CHASE,

The meeting then proceeded to the election of officers for the ensuing year. Dr. J. A. Robinson, of Morrisville, was elected President. He was escorted to the chair by Drs. E. E. McGovern and W. H. Wright. First Vice-President, Dr. K. L. Cleaves, Montpelier; Second Vice-President, Dr. Henry Turrill, Rutland; Recording Secretary, Dr. T. Mound, Rutland; Corresponding Secretary, Dr. Grace L. Bosworth; Treasurer, Dr. W. H. Munsell, Wells River; State Prosecutor, Dr. G. W. Hoffman, White River Junction. Executive Committee—Drs. C. W. Steele, Barrie; J. E. Taggart, Burlington; J. A. Pearsons, Barton.

Dr. Taggart, of Burlington, invited the Society to meet in that city next year, and the invitation was accepted.

Dr. W. Geo. Beers, Montreal, then read a paper on "Diagnostic Errors." A paper was read, written by Dr. G. Lenox Curtis, New York, on a case of "Reproduction of Tissue." (See page 121.)

The portion of bone removed by Dr. Curtis was exhibited.

Dr. Beers said that long before Dr. Ievers placed "Pheno-Banum" on the market he had received it from him to test. It had unquestionable value as a remedy outside of dentistry proper, but from actual observation in Quebec city among the patients of Dr. Ievers, or from the lips of others, lay and medical, he found that it was a valuable compound to add to his limited list of therapeutical remedies. He did not believe in multiplying, but in simplifying the materia-medica of the dental office. "Pheno-Banum" took the place of others for ordinary odontalgia with exposed and inflamed pulps, and for threatened alveolar abscess. Of course it is as unwise to plug up a cavity in an abscessed tooth with this as it would be with anything else, and patients who play with drugs deserve the consequences of their stupidity. He had met the class of "pooh-pooh" dentists, who condemn drugs and methods of practice without any experience of their own or observation of the experience of others. Every valuable idea we possess has had to run the gauntlet of unqualified criticism. He was firmly convinced that "Pheno-Banum," used according to directions, was indispensable to the intelligent dentist. Its adherent property alone when placed on floss silk or lint, and packed into the pockets in pyorrhœa alveolaris in open wounds, etc., gives it a preference over less stable compounds. As a root filling, used as directed with prepared zinc oxide, it had taken the place of everything else in his practice.

The President asked Dr. Ievers, who was present, to speak on the subject. The doctor said he preferred that the "Pheno-Banum" should speak for itself. It was the only fair way. However, he would mention that aqueous solutions lose their value to a large extent, and that the value of P. B., besides its composition, lay in its insolubility, keeping up constant stimulation to the parts. When he was in practice he made very extensive use of it for root filling, mixed with the prepared oxide of zinc which was now placed on the market, with the P. B., specially for the profession. Several members followed, and expressed very favorable opinions regarding the preparation which Dr. Ievers had given them two years ago when the Society met in Montreal. In reply to Dr. Chase, Dr. Ievers said he was now able to control its crystallization or granulating. If it became too thick, heat readily reduced it.

A paper presented by Dr. S. B. Palmer, on "Gingivitis and its Relation to Crown and Bridge Work," will appear in June issue.

Dr. Henry Ievers, of Quebec City, explained his preparation of Pheno-Banum.

Dr. F. S. Belyea, of Brookline, Mass., explained his method of fitting Logan crowns.

The Committee on Resolutions consisting of Drs. McGovern, Hoffman and Wright, offered the following, which was adopted :

"Duly appreciating the generous and kindly entertainment provided for us by the people of the city of Rutland, be it resolved, that the thanks of the Vermont State Dental Society be tendered to the Mayor and citizens of Rutland for their endeavors in our behalf, and also to the proprietor and manager of the Hotel Berwick for their courtesy and efforts to make our stay with them pleasant. And that a copy of these resolutions be printed in the daily papers of this city.

"E. E. McGovern,
"G. W. Hoffman, } *Committee.*"
"W. H. Wright,

The meeting finally adjourned at 11.30 o'clock, to meet in Burlington the third Wednesday in March, 1899.

THOMAS MOUND, *Recording Secretary.*

THE VERMONT STATE DENTAL SOCIETY TWENTY-SECOND ANNUAL MEETING, RUTLAND.

By A GUEST.

The twenty-second annual meeting of the Vermont State Dental Society was held at Rutland on the 16th, 17th and 18th of March, at the Hotel Berwick, and as a special invitation had been extended to the Canadian friends who had the pleasure two years ago of entertaining the Society at the Convention held in Montreal, a contingent of "Canucks" made their appearance. It was a little unfortunate that the month of March, being one of the busiest months of the year in Quebec Province, prevented as full a representation as there would certainly have been had it been a couple of months earlier or later, and the Canadian dentists have not yet risen to that social height to which Brother Jonathan so pleasantly aspired in securing the presence of their wives. The indefatigable Recording Secretary, Dr. Thos. Mound, and his charming aid, Miss Grace L. Bosworth, Corresponding Secretary, were determined that the visit to their town would not be forgotten, and the officers and Executive Committee decided upon a bit of a new departure in making the event one, not only of professional, but of political interest, coincident with the good-will which happily exists not only between Vermont and Quebec, but, in spite of party demagogues, between the United States and the British Empire. At first blush it was feared by some of the Canadians that this might be an embarrassment to the Vermonters, at a time when there was some "wrangling" about the treaty rights of Canada on the Stickeen, but Dentist Brother Jonathan and Dentist John Bull, jun., were determined to do their share at any rate in strengthening the bonds of good-will and fraternity. These were bonds which the United States Senate could not interfere with.

The first session of the Society was largely attended. The Mayor, a very fine and popular fellow, whom we expect yet to see Governor of the State, gave an admirable address of welcome, in which he said: That while the lawyer antagonized his opponent, and often does neither his client nor himself any good, and the rivalry of trades and the hostilities of manufacturing had their unpleasant features, the doctor was the friend of all, rich and poor, always ready to relieve the sick and weary, and standing by us to close our eyes in death. And he congratulated the members upon the honored branch of the medical profession they had chosen. It is not only honorable, it is one of the oldest. In the mouth of an Egyptian mummy, two thousand years old, artificial teeth were found set on gold. The importance of the art appears to have been appreciated so early. From that time, through all the ages, little progress, however was made. John Greenwood was the first American dentist ; he was practising in New York about one hundred years ago, and was the only dentist in New York at that time. The science as well as the art has since then made rapid progress. At present there are over 25,000 dentists in the United States, and about 7,000 in Europe. Dentistry was transplanted from the Old World to the New, and may be said by the wonderful practical advancement made here to be a distinctly American profession, thriving under our peculiar American conditions. In speaking of America he included Canada. Canada keeps in touch with all the arts, and particularly of dentistry, and we are glad to welcome to Vermont our guests from the Dominion. We have been in Canada, and we were captivated by the kindness and courtesy of the people, and when they visit us we do our best to captivate them.

One of the most important events in the history of dentistry was the establishment, about 1839, of the *American Journal of Dental Science*. Before then, the profession was followed in all the cities and small towns, but the members were obscure ; they did not know each other. With the establishment of the *Journal* the profession began comparing notes. The man who knew more than any other man found lots of other men like himself. The organization of societies was stimulated. Colleges followed. Through such contributions dentistry rose to its present status in scientific skill.

To our visitors he tendered the welcome of Rutland, and only wished that it was the leafy month of June, when Nature in all her beauty and bounty would join in the welcome. He hoped they would carry away pleasant recollections of the occasion. In concluding an eloquent speech, he said that he spoke from the fulness of his heart when he declared that the dental profession had filled the tenderest spot in his memory.

Dr. Beers responded for the Canadians.

It was a great disappointment to the Vermonters that the Canadian guests were so few, as not only had specially personal invitations been sent, but the banquet was specially tendered to the Dental Association of the Province of Quebec, in return for that given two years ago to the Vermont State Dental Society. It was not very gratifying to the small contingent to feel that not a single official of the Association was present. "They don't know what they missed."

Jack would not have felt dull in the Berwick House, even if he had had all work and no play. Mr. A. T. Boynton, the resident manager, has a genius for quickly organizing his forces, and everything, in spite of the unexpectedly large crowd, went on as merry as a marriage feast. The Berwick is more like a cosy home than a mere hotel, and even though the genial bookkeeper, Mr. C. R. Carrigan, had in the emergency to perform the feat of putting quarts into pint bottles, or in other words, accommodating two where there was only room for one, the thing was done so nicely, and Mr. Boynton's smile made it so pleasant, that the guests were like one large family.

"All aboard for Proctor! Every visitor entitled to a tombstone!" A charming ride of seven miles to the wonderful quarries and works of the Vermont Marble Co. in the town of Proctor, called after Senator Proctor of Cuban fame, who is the head and front of the marble industry in the State. By the personal courtesy of his son, Mr. Fletcher Proctor, and Mr. D. H. Bixley, the delegates were conducted through the works, mills and quarries at Proctor. One of the three great quarries, we believe, the quarry at West Rutland, was originally sold for $24 and an old horse. To-day 1,400 men are employed, 250 gangs of saws in use, and over $4,000,000 invested.

The Sutherland Falls quarry is the largest in the world. A depth of over 250 feet has been reached; and the views from the top looking down, and from the bottom looking upwards are very fine. Our readers may look forward some later day to another convention at Rutland, when these wonderful quarries will well repay a prolonged visit.

THE BANQUET.

Reported by T. L. MERRICK.

The *menu* was conspicuous by a cut of the Union Jack and the Stars and Stripes crossed, with the motto underneath, "May they ever be united."

Dr. W. George Beers led off the lists of toasts, to the evident surprise of the large audience, by the united one of "The President of the United States and the Queen of the British Empire." He separated the toast from all party politics, by referring to the critical position which the President occupied at the present time, and the admiration which his wise and calm conduct had evoked from the British people throughout the empire.

He said that the United States had had some unwise Presidents, as England had had some foolish Kings, but that both countries had good reason to-day to feel, that their respective rulers were great and wise in time of peace, as well as in times of peril. He ventured the suggestion, that party spirit should not be carried critically into the idea the American people held of their President; that the toast he offered was meant to represent him, not as the successful candidate of a party, but the chief representative of the State, as the Queen is that of the Empire, and that in that light both Republicans and Democrats could consistently accept it.

He then asked the audience to depart from their custom of not rising to toasts, and to stand and sing one verse of the American hymn, "My country, 'tis of thee," and one verse of "God Save the Queen." The response was most hearty, and after the singing, the Canadians started three rousing cheers and a "tiger," in which everybody present lustily joined. It was said that it was the first time the blended toast was ever given in the United States, and it could not have been introduced at a more auspicious time.

Dr. Newell Fiske, of Montreal, in responding for "Our Guests," expressed the pleasure it gave the Canadians to visit their American brethren professionally, and the special gratification they felt at the good feeling which now existed between England and the United States. Such gatherings as the Dental Convention were a mine of practical knowledge, and well repaid the members for the few days' absence from their practice.

Dr. Robert Simpson, of Montreal, also spoke in high terms of the professional benefits of the meeting, where dentists met from several States and from Canada to compare notes. Patients as well as practitioners got the benefit, and he was very glad, too, that they had given a tip to the politicians in the interest of good-will.

Dr. Henry Ievers, of Quebec, made a characteristically witty speech, showing how a good dinner lubricates business, and how at the social board the good feeling now existing between the two countries is cemented.

Dr. Cleveland, of Knowlton, made the happy remark that he had in his blood that of a former President of the United States, and though Grover Cleveland had not perhaps then acted just as he would to-day in his Venezuelan message, it was all forgotten now.

The toast of "The British Empire and the United States" was given to Dr. Beers, who replied as follows:

It has been my fate upon several occasions in the United States, from no suggestion of my own, to find myself entangled in the polemics of a Dental Convention in the morning, and the politics of States at night. I have to-night been asked to express the opinions of a Canadian upon the relations of the British Empire and the United States, and knowing that you know I am neither an amateur nor a professional politician, but, like yourselves one of those modest dentists who finds it necessary to give the best of his thought and energy to his legitimate business, I felt I might safely expose myself to criticism here, in a friendly attempt towards a better understanding between the two great English nations. Upon a former occasion I endeavored to remove the superstition that Canada was in the market for sale. All superstitions die hard, but thanks to the good sense of the American people, and the common-sense of our own, and in spite of the nonsense talked by several of your Senate, that superstition is as dead as Adam. Peace to its ashes! In presence of Americans of our own craft, your generosity makes it easy to talk practical politics, even when we cannot altogether agree, and if I venture to be very frank, you will believe it is none the less friendly, and if I mingle a little reproach with warm esteem, you must take it as a sincerely meant compliment to your desire for fair play. In spite of the circumscribed public sphere we, as dentists, occupy in our respective countries, we can surely feel that such opportunities as this for an exchange of sober fact and honest sentiment may have none the less influence for reciprocal good-will, because neither you nor I have political axes to grind or party schemes to uphold. The subject of this toast is beyond the bounds of partisanship, because just now it is one of patriotic interest, and patriotism rises far above the exigencies of party.

Before speaking specially to the subject, I must ask you to permit me to say a few more last words about our own part of the empire. When we Canadians observe the unfriendly policy which now and then actuates some of your Senators and a portion of your press, in their dealings with the big part of the British Empire to which we are heir, it is pleasant compensation to believe that they do not speak the heart feelings of Brother Jonathan at large, because wherever Britons and Americans meet at the social board, when we are your guests or you are ours, there is invariably the most reciprocal good-will. Statesmen and certain newspapers have, it must be admitted, a very difficult task to perform in pulling the wool over each other's eyes and attempting to sit in comfort between two shaky stools. But I cannot understand, why they should think it so frequently their duty to ignore the unmistakable rights and claims of their neighbors, and treat us with some measure of disdain, sometimes with silly attempts at coercion, and in general as if, instead of being a large, important and progressive country, as Canada is, we were a sort of political appendix vermiformis of the British Empire. I do not want to touch upon this subject too intensely, but just in passing to ask your brotherly remembrance of the fact, that we are just as tenacious of our rights as we believe we are faithful to our responsibilities, and, to speak metaphorically that Canadians, who are accustomed to racy roast beef, are not the sort of people to submit to this repeated *menu* of political humble pie. The attitude of the United States Senate in proposing to ignore the right we enjoy of free navigation of the Stickeen River, if met by a counter proposition of the Canadian Parliament to set aside the treaty obligations due to you on the St. Lawrence, would perhaps be considered on our part unneighborly. To expect Canada to make serious concessions without any further reciprocity or compensation for the same from the United States, is neither dignified nor diplomatic. It is not even decent horse-sense. To ask us to surrender our Atlantic fisheries and our coastwise carrying trade, and to abrogate our customs laws in favor of the miners of the United States, by the threat of refusing us the privilege of bonding goods across Alaskan territory into the Yukon district of our own country, is to ask us to put the neck of Canada under the United States' heel. I think you know us too well to imagine that we will do anything of the kind. To-day we admit your citizens freely into our golden lands to dig for gold, and to carry it away as if it were so much mud but your laws refuse Canadian citizens equal rights in your gold lands. Your laboring men can come over the border freely, and work, day in and day out, and take back their wages to the United States; but any poor devil of a peddler coming from Canada here must become an American resident or citizen before he can enjoy the valuable privilege of even selling peanuts and pop corn in the Republic. I mention these few of many such unfair and unneighborly specimens of puerile legislation. We take your bank bills, and sometimes your silver, freely, but only last night I was refused the privilege of passing a bill of the Bank of Montreal—the wealthiest bank on the continent—as if it was a relic of the Southern Confederacy.

Now, Mr. President, this sort of political policy is all wrong. It is as needless, too, as it is childish, because we are only 5,000,000 of people to your 60,000,000, and yet our banking system is admitted by your expert authorities to be vastly superior to yours, and we think our laws and our system of government just as good, if not better, than yours.

In the past history of British America your clever diplomatists got much the best of it, in disposing of the various territorial controversies between the two countries, but the walnuts and wine policy which led to our loss of Maine, Oregon and other sacrifices is no more possible. Canada has now to be consulted by England on all questions in any way concerning our interests, and your statesmen have learned that England's construction of treaties bearing on any matter of this kind on our shores or our seas, is based, not alone upon the ancient trade interest of the Mother Country, but upon Canadian rights and Canadian legislation. At the Washington Conference of 1871 the late Sir John A. Macdonald, then Premier of Canada, acted as one of the English High Commissioners, and the treaty clause by which the United States had to pay over five million of dollars to Canada as the value of her fisheries was the first illustration in our history of the concession to us by England of a Canadian representative in the making of treaties. The interests of Canada in Behring Sea have been represented by Canadian statesmen, and you had a brilliant object lesson during the Queen's Jubilee, in the honors paid by Her Majesty to our present Premier, Sir Wilfrid Laurier, that the policy which lost to England the thirteen colonies, and which often cut at the vitals of Canadian life, is as dead as Adam and annexation. You see, Mr. President, Canada is no longer in her swaddling clothes; she is a full-grown, buxom and bustling young woman, and you do not display to her view the gallantry or generosity of a lover. She believes that you imagine she would marry you for your money, but she believes, too, that you want to marry her for her land and her gold.

When our Government has held out to you the open hand of fair reciprocity, some of your statesmen thought that it was the offer of a weakling and a coward, and the open hand became a closed fist. If our Government to-day is seriously contemplating the passage of a bill to prevent mining in our gold lands by any one who comes from a country which, like yours, has an alien labor law against Canada, it is only a measure of reciprocal tit-for-tat, for which you may thank the American Senate. There is nothing which so distinctively marks diplomatic one-sidedness and short-sightedness, as the supercilious way in which certain honorable gentlemen in Washington, with a deluge of ink and of talk, attempt to bring the existence of Canada to an end. The old saying that Canada would some day drop into the Republic like a ripe apple, has surely proved to be one of the piquant fictions of the imagination, for if it should ever drop there, it will not be because it is ripe, but because it will be rotten. The misconceptions of Canadian feeling are due to the misrepresentation of a part of your press and a number of your politicians, and I am sure if you will dispassionately study the history of the two countries from the time of the American Revolution to the present session of the Canadian Parliament at Ottawa, you will discover that whatever policy or action on the part of Canada has been at all obnoxious or aggressive, has been compelled by the natural and national instinct of self-defence. Let me plead with you to dispel from your minds the thought that we of the North are afraid to face the responsibilities of developing our own Dominion, in an inseparable union with the rest of the Empire, and let me beg you to believe that there are no sacrifices too great for us to make, if we should be called upon to serve our Queen at home or abroad, and to keep what we hold.

We have had in the past to make many sacrifices for good-will between our Mother Country and the United States. British statesmen, like Lord Ashburton, in the past, have made you free gifts of some of the most necessary portions of our territory. We are quite sure, under present conditions, this can never be repeated, but we Canadians desire, while maintaining our own rights and doing our best for the development of our country, to be not only good neighbors, but the means, so far as possible, of fostering the best of feeling between England and the Republic.

If your people would give us more of your good-will, and if there were more of the fraternal object lessons which have been exhibited between Vermont and Quebec ; if, as one of your Vermont regiments came to Canada last year to join us in celebrating the Queen's Jubilee, the old Union Jack and the young Stars and Stripes could often wave together here in some common national sentiment, we would both think less of the things about which we differ, and more of the things about which we agree.

I feel that I have, perhaps, occupied too much time discussing our position as Canadians, because while we are deeply devoted to our own Dominion, we feel the pride as well as the responsibility of being one of the outposts of the British Empire. The expansion of the Empire has been marvellous in the sixty years' reign of our Queen, but the old colonial policy of a century ago has long ago disappeared, and the Fathers of your Revolution, who were then British subjects like ourselves, gave the obtuse and dull-witted England of the time a salutary lesson which she never forgot. I will not be so hypocritical as to say I believe that the American Revolution was " providential," but whatever we may think about it, you cannot escape the fact that you are bone of our bone, and flesh of our flesh, and that Old England was as much the mother of the Republic as of Canada ; that you were as legitimately an offshoot of the colonial expansion of England as the people of Australia—of the same stock and pedigree. What about the squabbles of the past? Are we forever to cherish animosities with which this generation had nothing to do? Are there not vastly more important duties and obligations for us to fulfil in the present, the one for the other, and both for each other? The world has been out of joint for many years ; the English-speaking people are reaping the result of their commercial success, in the jealousies and threatened anti-commercial combinations of European powers, and it would seem as if a providence, moving in a mysterious way, was shaping some sort of a future alliance between the British Empire and the United States that would secure to both the commercial and political solidity they have deserved, and obtain perhaps for the whole world a permanent peace.

Mr. President, I have no desire to magnify the greatness of the British Empire to-day, but Old England was never stronger in her physical outfit, and never more deeply rooted in the loyalty of her subjects than she is at this hour. We were proud of her when she stood in splendid isolation at bay, with unflinching courage, against the whole world barking and biting at her peaceful tail. When all Europe seemed to be in alliance against her, and she put her back to the wall and defied them, there were no greater tributes of admiration than those which were expressed by her kinsmen in the United States. You did not want her to meddle in your affairs, but when the Old Land was threatened, more because she was English, and being English, she was a commercial and political success, then blood was proved to be thicker than water, and the interests of Britain and the United States found a common response. And only recently, when she has shown herself to be the defender of open commerce with China, and that she seeks no aggrandizement for herself, but is the champion of the foreign trade interests of the United States as well, the feeling that she was moved by unselfish interest was deeply manifested in your press. And I can tell you that this sentiment has its ready response in the Mother Country as well as in her colonies. The other day, when that sad disaster occurred to the *Maine*, the expressions of public sympathy, as well as those of private anger, were as general and sincere as if our naval cousin had been a vessel of the British fleet. Your statesmen and your papers have often hit us under the belt, but when it was hastily suspected that the Spanish Government had instigated the destruction of that fine ship, the old sailor instinct of Britannia was roused to the deepest indignation.

What are the common interests of the United States and Great Britain ? Their own peace and prosperity first, and that of the rest of the world afterwards. How is this to be best accomplished ? I would not have the presumption to answer fully my own question ; but it is fast becoming apparent to the simplest understanding that Europe is not only anxious to combine against the British Empire, but against the commercial supremacy of English-speaking people all over the world. Not long ago the Austrian Minister of Foreign Affairs let the cat out of the bag in proposing a union of European States to meet the effect of trans-Atlantic competition. The domination of the Anglo-Saxon race in the commerce of the world is feared as much as its success in colonization. What Spain discovered, what Portugal navigated, what Holland traded, what France colonized, have been lost to them. The old colonial policy which lost to England her American colonies is no longer necessary ; and yet, when Germany and France set out a few years ago to create colonial rivals there was nothing much left for them.

" Trace on a globe the trade routes of commercial shipping ; on all the continents ; at all the continental headlands ; in all oceans, seas and the great gulfs, Britain has acquired harbors and fortresses, coaling stations and ports of call. She practically commands the seas for thousands of miles around them. She owns the best part of Asia, controls Egypt, and practically owns all Africa south of the equator worth having. Take Egypt and South Africa out of the dark continent, and there is nothing much left. Every island in the Pacific worth having is owned by England." In this expansion the United States commercially shares. Why should she not look forward to the ownership of South America, and to a constitutional evolution that will make it as possible for her to rule there as England rules in India or Africa ? Why should not the irresponsible rumors of a British and American coalition or alliance some day become an accomplished fact, in spite of present constitutional difficulties and in spite of the demagogues in England as well as in the United States, whose interests are most promoted by the fomentation of mutual distrust. Within the sphere of the practical politics of the Anglo-Saxon people in the future, there could be no greater accomplishment for the peace and good-will and commercial prosperity of the world ; and the statesman who can solve the problem which this question presents will live in the memory and gratitude of the two nations most concerned. At present, as you may see by the remarks only yesterday of Lord Beresford, favoring an Anglo-American alliance, and by the expressions of the British press, the sentiment is there ; but such an alliance is easier made by England with any other nation in the world than with the United States. The principles of the American constitution resent European entanglements, and there are elements in the Republic always eager to misinterpret British motives. The great commercial interests of the United States are threatened by every country excepting England. Her trade policy in her kingdoms and in her colonies, consistent with the responsible government which she has given several of the latter, shows that she is the champion of free commerce for all the world ; while Russia, Germany and France have shown, by all their foreign policy, to be exclusive and oppressive. The question is not one of sentiment at all ; it is one of mutual commercial interest, and with all the good wishes and good-will of Canada for its accomplishment, it seems to be one that must manifest itself more widely among your people, and in your Senate, before Spain or any other possible foreign foe, which might threaten war, would be made to feel that if they hit Washington they hit Westminster ; if they ever threaten Jonathan they likewise threaten John Bull. The two fleets and the two flags united, as we see them so happily to-night, would give assurance of the peace and prosperity of the greatest Empire and the greatest Republic.

Dr. Beers concluded by reciting the following poem, written by a friend, now resident in Montreal. It has a Kipling ring in it, and is well worthy of presentation :

A SONG OF EMPIRE.

English we ! and you deem it shame,
Sharing our speech to share our name !
English we, and we draw from you all,
Briton and Teuton and Dane and Gaul,
The blood that our fathers blended up
As a priceless wine in a golden cup,
Feeding upon it, and gathering strength,
Childhood, boyhood and youth, till at length
They rose in the might of the man and hurled
A girdle of empire about the world.

English we ! and the race is young,
Years we were silent and gave no tongue ;
Calm in our strength, till you hemmed us in,
With a ring of steel and the ceaseless din
Of threatening war. 'Tis for you to say
If the brood of the mastiff forced a way.

English we ! Can you blame us now,
You who have taught us the when and how,
If we learned the lesson of ancient Rome—
To stretch our borders and make our home
On each foot of earth that our arms had won
From the dawning east to the setting sun ?
English we ! and we hold our own by right of
the blood we have shed ;
English we ! and shall hold it, were it but for
the graves of our dead.
English we ! and we ask you, you who are
swift to condemn,
Would you yield but a foot of our conquests
if you were the lords of them?
What do you say, oh, Russia ? What do
you answer, France ?
When might is right with the one, and the
cry of the other—Advance !

English we ! Shall we hand it on,
The heritage fair that we entered on,
Broad and firm and just as of yore,
Breathing the spirit that formed its core,
For our sons to fulfil their destiny :
That the rolling deep where our fathers sleep,
All the earth their feet have trod,
In the breadth of our children's rule shall be
But as corner-stones to their memory,
Raised by the hand of God ?

—J. ROSS-WETHERMAN.

Mr. Towne's Speech.

Mr. W. H. Towne, Boston.

Mr. W. H. Towne, of Boston, of the S. S. White Company, responded to the toast as follows :

Mr. President, Ladies and Gentlemen,—One year ago, on a similar occasion, and under the same auspices, I had the honor to respond to the toast of the "Navies of Great Britain and the United States," but to-night a larger theme, and one of the most intense personal interest, has been assigned me, viz., "The Empire of Great Britain and the United States." And when we contemplate the tight little isle, and its vast domination on sea and land, exceeding in extent the mighty empires of Greece and Rome, we can understand the parable of the mustard seed, the smallest of all seeds, but it grew into a mighty tree, under which the birds of the air sought shelter. So have many undeveloped nations found shade, rest and civilization under the spreading oak of liberal English monarchy. Our French brethren have contributed by their Norman conquest of England to the enrichment of the English language, law and literature ; yet, nevertheless, the Anglo-Saxon has preserved his individuality and racial characteristics amidst all the vicissitudes of a thousand years of history. There is something awe-inspiring and providential in this mighty growth to power and influence of the Anglo-Saxon, as illustrated not only by England, but by the Republic of the United States, whose star-spangled banner also stands for personal liberty and individualized existence, for education and sweet domestic family life ; also as a hope and beacon star to the downtrodden of earth ; and the signs are multiplying that not only by force of racial characteristics, but by outside pressure, the Empire of Great Britain and the Republic of the United States must finally enter into an alliance, in order that their manifest destiny may be accomplished, in exploiting the highest ideals that have ever been wrought into established institutions, law and customs, not only for their own glory, but for the benefit of universal humanity. England stands to-day in, it may be, splendid isolation amidst the mighty unsolved problems of Europe, Asia and Africa, and her diplomacy has received severe checks during the last five years, resulting in a restless Mohammedan population, a crushed Armenia, and, a despoiled Greece; while the aggressions of Germany, Russia and France are very pronounced in China, which, if not checked, must result in the dethronement of her commercial supremacy. South and East Africa, and the north-west borders of India are also sources of anxious concern. British statesmen, including the Prince of Wales, are very pronounced in their desires not only for arbitration, but for an alliance with the United States, which shall stand as a bulwark against all retrogressive influences, and this union of the Anglo-Saxon race is bound to come—it seems to me a manifest destiny; a leadership that is fit because it embraces the highest ideals to which humanity has yet attained. The United States has a problem at her very doors, and I am free to say that the time is fully ripe to say to Spain: Release your bloody grasp from the throat of the Queen of the Antilles, and let her go free; and when that shall have been accomplished, and the last vestige of Spanish domination swept from this hemisphere, Americans can then feel that their heroes of the ill-fated *Maine* have not died in vain.

England alone of all the powers has given us her unstinted sympathy in our present complications with Spain, and indications are strong, that a British fleet would be at our disposal if Spain should succeed in forming an alliance against us. (Cheers from the Canadians.) While we feel fully competent to acquit ourselves with honor as regards Spain, we are not unmindful of the possibility of serious complications and hostile alliances against us, and it is comforting to feel the British heart throb in unison with our own. I would disparage no nation, but I would invest with responsibility the two great English-speaking nations by a formal alliance, which I believe would hasten the time that humanity is praying for, when war shall be no more forever, and every man should sit under his own vine and fig tree, with none to molest or make him afraid.

John Bull and Brother Jonathan, may they ever stand shoulder to shoulder for international justice and righteousness, and for the promotion of life, liberty, and for the pursuit of happiness for all mankind. (Applause.)

IN the warm days that are now before us, when a rubber glove cannot be worn with comfort while engaged in prosthetic work, an anointment of honey for the hands will subserve the same purpose. It holds the dirt in suspension and dissolves very quickly when immersed in water, leaving the hands soft and clean. Take clarified honey and rose water, of each one pint, listerine two ounces. Mix and bottle. For winter use, add two or three ounces of glycerine.—*Dental Items in the Medical Brief.*

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. = = = = MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

GERMAN EDITOR:
Carl E. Klotz, L.D.S.,
ST. CATHARINES, ONT.

FRENCH EDITOR:
J. H. Bourdon, L.D.S., D.D.S.,
MONTREAL, QUE.

ABSTRACT EDITOR:
G. S. Martin, D.D.S., L.D.S.,
TORONTO JUNCTION, ONT.

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KINGSTON, ONT.

CORRESPONDING EDITOR:
W. R. Patton, D.D.S.,
COLOGNE, GERMANY.

EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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OUR VERMONT NUMBER.

Our friends in the State of Vermont, over the Quebec border, have always extended to us the freedom of their meetings. We are neighbors who try to follow the golden rule. In this issue we devote special attention to their last meeting, and beg them to accept it as a journalistic token of professional and political good-will. Vermont sets an example to more distant States. There is no reason why the United States and Canada should not be the best of friends and neighbors. If the dentists were in the Senate and the State Legislatures we would be as happy as we could wish.

CROWDED.

A very valuable article by Dr. S. B. Palmer, of Syracuse, N.Y., and other matter is held over.

OUR ONTARIO NUMBER.

Look out for the May issue. It will be worth binding separately.

Dominion Dental Journal

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Our Portraits.

Dr. C. N. Johnson, Chicago, was born at Brock, Ont., and educated at Port Perry High School. He passed his examination for the L.D.S. in 1881; practised about two years in Collingwood, went to Chicago and graduated as D.D.S. in 1885. Dr. Johnson, both personally and professionally, always finds a warm corner in the hearts of the Canadian profession. Though occupying a very important professional position in the Chicago College of Dentistry, and enjoying a large and select practice in his adopted city, his pen and presence have always been ready to show that he has not forgotten his Canadian connection. As a practical operator he is recognized as one of exceptional merit, and as a full and fluent writer, his fine literary attainments have enabled him to add a great deal of solid value to the literature of the profession, as well as to *belles-lettres*. We are glad to observe, by a press despatch, that Dr. Johnson has volunteered for one of the Chicago Canadian-American regiments which have offered their services during the war, and that he has been elected as one of the Executive Committee.

G. V. Black, M.D., D.D.S., Sc.D., Chicago, is in his sixty-first year, and is one of the many living proofs that a man of science who has accustomed himself to industrious research, is in the prime of his mental life, when the younger members of the profession regard him as having one foot in the grave. The Doctor practised dentistry near Jacksonville, Ill., before the war, and served in the army as a full private in the rear rank. He practised a short time in St. Louis before he went to Jacksonville in 1891. On the reorganization of the Dental School of the North-Western University in 1891 Dr. Black was placed on the teaching staff, and is now Dean. It would need a volume to recount the story of his indefatigable labors in the science of the profession. His published works are the most eloquent testimony.

Proceedings of Dental Societies.

ONTARIO DENTAL SOCIETY.

The tenth annual session of the Ontario Dental Society was opened March 3rd, at 10.30 a.m.. Dr. J. A. Marshall, President, in the chair. In the absence of the Secretary, Dr. W. Cecil Trotter, B.A., was elected secretary *pro tem.*

The election of officers was then proceed with and resulted as follows: President, Dr. G. S. Martin, Toronto Junction; Vice-President, Dr. J. M. Brimacombe, Bowmanville; Secretary, Dr. W. Cecil Trotter, B.A., Toronto; Treasurer, Dr. C. E. Klotz, St. Catharines. Representatives on Executive—District No. 1, R. E. Sparks, Kingston; No. 2, D. C. Smith, Stouffville; No. 3, Dr. W. E. Willmott, Toronto; No. 4, Dr. F. Kilmer, St. Catharines; No. 5, Dr. Beemer, Simcoe; No. 6, Dr. W. A. Brownlee, Mount Forest; No. 7, Dr. Eid~~b~~t, Stratford.

It was moved by Drs. W. E. Willmott and J. F. Ross that the Secretary be instructed to paste a copy of the Code of Ethics in the membership roll-book, and for this year that all those who sign the code and pay the annual fee be entitled to membership in the Society. (Carried.)

On motion of Drs. W. E. Willmott and W. Cecil Trotter, it was resolved to have printed membership tickets in the form of a receipt for the annual fee, and that admission to the session at which Dr. Black addressed the meeting be by ticket, except to the members of the Senior Class of the College.

Owing to the lamentable death of the Treasurer, Dr. C. P. Lennox, since the last meeting, and his report not yet having been placed in the Society's hands, the order of business, "Reading Treasurer's Report," had to be dispensed with.

The Executive recommended a change in the order of subjects on the programme, owing to the fact that Prof. Ramsey Wright could not be present at the evening session as advertised.

The afternoon session was called to order by Dr. J. A. Marshall, who introduced the newly elected President, Dr. G. S. Martin, who, in a few words, thanked the Society for the honor done him. Dr. J. A. Marshall then delivered his retiring address.

The Chairman then introduced Prof. Ramsey Wright, of Toronto University, who delivered an address on "The Evolution of Teeth," the lecture being illustrated by lantern slides under the direction of Prof J. J. McKenzie, of Toronto University and the Dental College.

Prof. Wright showed by his very excellent slides how the evolution might be traced from a very rudimentary state, where the teeth are in layers or strata. In the case of the shark, when one stratum of teeth is worn off the next lower takes their place. This arrangement corresponds with the temporary and permanent teeth in man. From the lantern slides showing the teeth of the cat, the dog, the bear, etc., it was very clearly and convincingly shown that nature tends to develop the useful and get rid of the less useful in this as in all other fields of her operation.

The presentation of an address on "The Clinical History and Pathology of Alveolar Abscess," by Dr. J. B. Willmott, was one of the most interesting and practical portions of the programme. Dr. Willmott demonstrated by means of a fine series of lantern slides the different types of abscess, and the different stages in their development, also the dangers attendant on their presence in the alveolars.

Dr. Willmott was followed by Dr. D. C. Smith, of Stouffville, in a paper on "Treatment of Alveolar Abscess," and a discussion was introduced by Dr. J. F. Adams. The point that chiefly bothered Dr. Adams was how to relieve at once the severe pain suffered by the patient who comes to the office perhaps at two or three o'clock a.m. and wants tooth saved.

Dr. C. N. Johnson, Chicago, said the best way to avoid trouble of that kind was to have office down town and live five or six miles away from it.

Dr. G. V. Black, of Chicago, being invited to answer Dr. Adams' question, gave his method of relieving severe pain from abscess. He would take a strong knife and with a quick stroke would cut right down through alveolus to the seat of abscess. The relief is instant and the remedy not as severe as one might think.

Dr. C. E. Klotz described his method of getting down a curved or contracted root by means of a barbed Donaldson bristle, used with a sawing motion.

Dr. C. N. Johnson being asked to describe his method of amputating root, did so by means of a diagram on blackboard. He enlarges fistulous opening by means of a tent of cotton so as to get access, then cuts off apex of root with drill in engine.

At the evening session Dr. M. G. McElhinney, of Ottawa, read a thoughtful paper entitled, "In the Matter of Advertising."

The discussion was opened by Dr. J. E. Wilkinson, Toronto, who advocated educating the public as the best means of off-setting the advertising quack.

Dr. Harold Clark, Toronto, wished action to be taken by the Society to publish a pamphlet to be distributed by the Society without having any dentist's name attached. It was decided to defer action for the present, it being stated that the Toronto Dental had such a pamphlet under consideration.

Dr. W. A. Sangster, of Port Perry, next read his paper, "Preservation of Pulps." (See paper.)

In the discussion that followed, the well-worn question of pulp capping was handled in an interesting and instructive way.

Dr. John F. Ross thought the question might be most profitably considered by asking two questions.

1. Under what conditions is pulp preservation advisable?
2. What method will best preserve the pulp?

Granted that the conditions are such that there is a reasonable hope of success, his method is to obtain absolute dryness if possible, using, after applying the dam-absolute, alcohol with the warm-air blast. Dr. Black's 1, 2, 3 mixture is a favorite dressing. Use oxide of zinc, or Weston's capping in a thick, putty-like paste.

Dr. Beacock asked if the oxide of zinc was not a menace to pulps from the presence of arsenic.

Dr. C. N. Johnson did not consider that there was much danger in the arsenic to be found in oxide. Take into consideration the age of the patient. If the tooth is not properly calcified, by all means try to save pulp alive. In anterior teeth save pulp if possible, because of darkening so frequently caused by devitalizing. Save any pulp if you can soothe pain. Tell patient it is a temporary expedient. Let us be merciful to our patients and save them all the pain possible. One point he would emphasize. All decay should be cut away, as it is poisonous to the pulp. The demonstrations made by Dr. Williams show that the effects of caries extend a long way in advance of the visible line of decay.

Dr. Sparks, of Kingston, objected to Dr. Johnson's idea of covering pulps that he expected would die. Better devitalize at once and save the patient and yourself trouble. Your reputation will suffer from failure, even if explained to patient.

Dr. Baird, Uxbridge, found that the presence of malaria in his district prevented saving pulps that might be saved in Toronto. Found better success with farmers than with towns people.

Dr. J. B. Willmott called the attention of the Society to the action of the National Dental Association in placing the Province of Ontario with the Eastern States in the recent arrangement and amalgamation with the Southern Association. This was mainly due to the influence of Dr. Thomas Fillebrown, of Boston, President of the National Association, and this Society should acknowledge the courtesy done the profession in Ontario and accept the arrangement officially. On motion, the courtesy of the National Association was unanimously accepted.

On motion of Drs. Klotz and R. J. Husband, a committee, consisting of Drs. H. T. Wood, J. B. Willmott and R. G. McLaughlin, was appointed to prepare a letter of condolence to be forwarded to the family of our late lamented Treasurer, Dr. Chas. P. Lennox, of Toronto.

At the annual meeting of the Ontario Dental Society held during the month of March in the city of Toronto, the following resolutions were unanimously adopted :

"That the members of this Society have heard with feelings of profound sorrow of the death of C. P. Lennox, L.D.S., an honored member and officer of this Society.

"His untiring interest in its work for many years, and his zealous discharge of the duties devolving upon him as an officer, have won for him the esteem and respect of his fellow-members.

"For more than thirty years engaged in the practice of dentistry in the Province of Ontario he was looked upon as one of the pioneers in the profession in this country, and as one who had borne a part in the early development of the profession so near to his heart.

"To his bereaved family we extend our heartfelt sympathy, and trust that the weight of their grief may be made lighter by the power of God's lovingkindness, and that they may be enabled to look beyond the narrow sea of death and perceive the perfection of that Divine purpose that doeth all things well.

"That a copy of these resolutions be sent to the family of the late C. P. Lennox, and to the DOMINION DENTAL JOURNAL."

Friday, March 4, 1898.

ANNIVERSARY SESSION.

"Dentistry and Dentists in Ontario before 1868." Paper read by Dr. H. T. Wood, M.D.S., Toronto.

"Development of Dentistry from 1868 to 1898," was read by Dr. J. A. Marshall, Belleville.

"Our Responsibility for the Future of Dentistry in Ontario," was read by Dr. R. J. Husband, L.D.S., D.D.S., Hamilton.

Dr. JOHNSTON then read a paper.

The PRESIDENT—There are some letters here from some of the old members which Dr. Marshall will read.

Dr. MARSHALL read communications from old members.

AFTERNOON SESSION.

Meeting opened at two o'clock.

The PRESIDENT—Dr. J. B. Willmott will address you in a few words.

Dr. WILLMOTT said:

Mr. President and Gentlemen of the Ontario Dental Society,—I have asked permission of the President to be allowed to introduce to this Society Prof. Black of the city of Chicago. (Applause.) To all those who are familiar with the "American System of Dentistry," Dr. Black's name is a household word to all those who have been keeping track in any way of the literature of the profession in the last twenty years. The work which Dr. Black has done for the profession is not so well known as his name. I sometimes tell my class that knowledge is divided into two sections. Those who have eyes and see not; those who have eyes and use them; those who have ears and hear not, and those who have ears and use them, the first section immensely outnumbering the second. In other words, that we have in the community a very few observing people. A very small percentage of the entire community have anything of the faculty developed, which might be spoken of correctly as the observing faculty. A few have this faculty by nature, and they develop it by exercise until they have become of inestimable value to their fellows. Dr. Black emphatically belongs to this last class. A man who has eyes and has used them all his life; who has never come across a phenomenon in which he was not moved by an irresistible impulse to enquire into and determine its origin and cause, and, as a consequence, he has become known to the scientific as an original investigator. His work has not been confined by any means to this question of amalgam, in which he has made its physical properties a study for a good many years, but in the realms of bacteriology, histology and physiology Dr. Black's name is quite as well known as it is on the question of amalgams. I esteem it a very great pleasure that the members of the Dental Society are permitted to attend a meeting in which Dr. Black is going to give us the result of his observations and experiments with reference to amalgams. Dr. Black met the members of the Toronto Dental Society on Wednesday evening and we filled thirty steel tubes, and these have been under constant measurement and observation since. They were filled about half-past ten on Wednesday night and they are not turning out satisfactorily. I am afraid some of us, who plumed ourselves that we were making thoroughly satisfactory amalgam filling, will have to get ashamed of ourselves and do better. The result of these fillings show beyond a doubt that amalgam filling does not preserve the teeth. I confess to a feeling of deep humiliation as I sat in the meeting this morning, when we were holding the thirtieth anniversary of the date of the incorporation of the Royal College of Dental Surgeons, when dentistry in Ontario became a profession by the strong arm of the law. I was not happy by any means. In the first place, I had invited all the members of the senior and junior classes, about 130 men, to be present this morning, and we had about twenty of them wanting to learn something. In the second place, the members of the Society had gone to a great deal of trouble and expense to make this thirtieth anniversary a memorial day, and we had the grand total of thirty members of the Society present. It is not creditable to the members of the Society; it is not creditable to the dentists of the city. We had four admirable papers as we don't generally have an opportunity to listen to, and I regret exceedingly that the members of our own classes, and I regret equally as much that the members of the profession, whom I see now in considerable numbers, did not see fit to attend a meeting that was intended to be an important epoch meeting in the history of dentistry in this country. It affords me great pleasure to introduce to you Dr. Black, of Chicago.

Dr. G. V. BLACK, Dean of the Dental Department of the North Western University, Chicago, said:

Mr. President and Gentlemen,—In presenting to you this old subject of amalgam in its new features I am undertaking a task that is extremely difficult. I recognize that here, as I have recognized it elsewhere, I am introducing to you physical measurements of the movements of amalgam that will be difficult for you to comprehend, difficult for anyone. The manner of arriving at these results is perhaps somewhat difficult to understand, and I wish that you have the best opportunity that I can give you of understanding these plans of work; and of understanding what I say in regard to them. I recognize that it is exceedingly difficult for me to convey in words descriptions of these processes and of these movements that amalgams perform during the setting that would be clear to your minds. Now, I should like for Dr. W. E. Willmott, who has been with us in every mersurement, I believe, and has kept the records of these measurements, has observed the movements recorded by the micrometer and the movements as seen by the microscope, been with us through it all, I would like for him to give us first his impressions of this work—of course it has all been new to him—and whatever else he may wish to say to you about it. Then, I should like for you, as many as may wish of the members of this Society, to go to the histological laboratory and look at the fillings under the microscope. There you can see the amount of shrinkage as revealed by the microscope. See for yourselves what it means, and make out in your mind, if you can, what I shall mean when I tell you that this amalgam has shrunk ten points, or eight points, or seven points. See for yourself, for these things can be seen by anyone. We make them directly tangible to the senses. By this observation I think you will be much better enabled to understand what I mean when I say that this or that filling has shrunk so much.

Dr. WILLMOTT:

Mr. President and Gentlemen,—Since the meeting of the Toronto Dental Society on Wednesday evening at half-past seven, I have been working every spare moment night and day at these measurements, and I have not had time since Dr. Black asked me to give my impressions of the measurements to compare the records one with another. What I have seen, though, impresses me very forcibly with the fact that we cannot depend on amalgam. What has impressed me more than anything else, apart from the amalgam, is the wonderful accuracy with which Dr. Black makes a measurement to forty-thousandths of an inch, leave it for half an hour and then test it and it is exactly the same as it was. As far as I have had time to look at the records it seems to me it makes very little difference as to manipulation, but it is in the preparation of the cutting and the annealing. It will not be proper for me to make any comparison of the records. Dr. Black has already made that, and will give you that far more accurately than I can if I had studied the record for a week. Just one point about the shrinkage. It may seem to you but a very small shrinkage. Compare the distance between the amalgam and the edge of the tube under the microscope. Compare the distance with the size of the micro-organisms that we understand are present. We can get three hundred or four hundred of them side by side in that space.

Dr. BLACK—Now, Dr. Noyes and Dr. Willmott have arranged a number of specimens in such a way that you can pass in single file and examine all of them without crowding. Make it a point to do that and view the specimens and return in the same way and we will be able to see them quickly and have no confusion, and particularly note the amount of shrinkage or the amount of separation of the amalgam from the walls of the tubes. (Members of Society pass out in single file and view specimens. After all had viewed them,)

The PRESIDENT—Dr. Black will now address the meeting.

Dr. BLACK (who was received with applause), said:

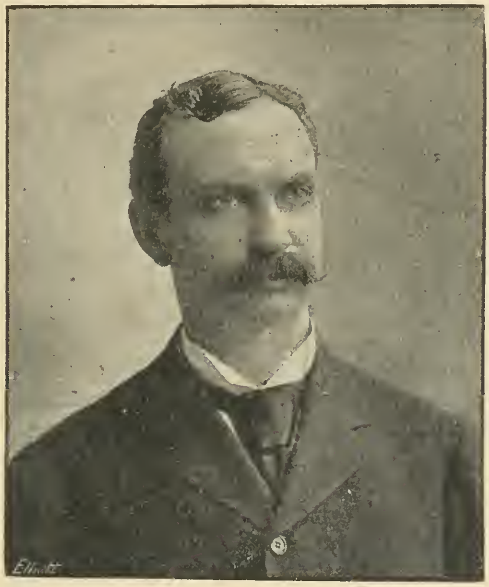
Mr. President and Gentlemen,—After seeing the exhibits I think you will be better able to understand what I mean when I speak of shrinkages of amalgam. The arrangements were not such that you could well see the results of expansion, but certainly you could understand from the observations you made through the microscopes that an amalgam that will shrink until you can see between the amalgam and the margin of the cavity, which in this case is a steel tube, is not a suitable material for filling teeth. There have been thirty-five fillings made, nearly all of alloys you are using in your practice. Twenty-five of these have the margins open so that they are readily seen by microscopic observation. There are eight fillings that are sufficiently good so that the opening cannot readily be seen by the microscope. There are two fillings, the margins of which are badly broken by expansion. This leaves but eight fillings out of the thirty-five which we could regard as reasonably good if they had been put in teeth. Now, gentlemen, this may seem to you to be a very bad report of amalgam as a filling material. I have made such an exhibition as this in the Illinois State Dental Society, in the New York State Dental Society, and Dr. Noyes has very recently made a similar exhibit in the Odontographic Society of Chicago. I will say to you that this is just about as good a showing as has been made in any of these, so that the showing here is not worse, nor is it particularly better, than the showings that have been made elsewhere.

Now, a word or two as to the manner of making these measurements. You understand that it is with the binocular microscope that we get the best views of shrinkage and expansions; indeed, with expansions, we can do almost nothing with the monocular microscope, but shrinkages we can see moderately well with the monocular microscope, that is, we can see the parting of the amalgam from the edge of the cavity or tube, but we cannot see the sinking of the amalgam below the surface as we can with the binocular microscope, in which we are able to get a stereopticon view, if I may so speak, that is, we are able to see depth as well as lateral shrinkage, and follow the sinking of the amalgam into the tube. This is the instrument (micrometer) with which the measurements are made. It works readily to a ten-thousandth of an inch and even to a forty-thousandth of an inch if we wish to be careful and work in the fourths of a point, that is, one-fourth of one ten-thousandth of an inch. The markings on the dial are one ten-thousandth of an inch. We readily divide them into fourths and work to ¼ of one ten-thousandth of an inch. The instrument proves itself to be quite accurate, doing that work very readily.

After a long search and careful examination of material in which to place fillings with the view of getting one that is unchangeable, we found tempered steel to be the best. Many seem to fear the changes of temperature, causing expansion and shrinkage of the steel, would falsify our measurements. Of this I will say that the arrangement of the instrument is such as to eliminate such changes. For instance, this is a setting block, while here are the tubes. Some of you didn't perhaps see the tubes before they were filled and I will pass a few of them so that you may see them. (Passes few tubes around. Steel tubes about an inch in diameter and half an inch long.) The tube in the measurements made is caught by its face and the measurements are taken from the face of the tube, so that differences in temperature that cause expansion of the tube will make no difference, because it is caught by its face. Then the only element of shrinkage and expansion that could possibly affect our measurements in any way would be the difference that there might be in the shrinkage and expansion of the amalgam from temperature and the shrinkage and expansion of the steel. That

DR. G. V. BLACK, M.D., D.D.S., Sc.D.,
CHICAGO, ILL.

difference is not eliminated, and by careful trial I find that I cannot find it with this instrument. For instance, an amalgam that has stood until it has become stationary, if measured at a temperature of 32 degrees and then measured again at the temperature of the human body, or 98° F., will not show shrinkage or expansion on account of thermal change with this instrument, so that we regard thermal changes as being eliminated entirely from our measurements. These tubes have a groove cut around the bottom of the walls of the tube, for this reason: We find that a smooth tube with parallel walls, if filled with amalgam that will shrink will allow the amalgam filling to drop out, and it is necessary that we make a cut in the wall to keep the filling in the tube. Notwithstanding that, several of the fillings we have made here have become shaky in the tube. They cannot fall out, but they will shake about so that we cannot continue the measurement with this instrument; but we can follow it with the microscope.



DR. C. N. JOHNSON,
CHICAGO, ILL.

Now, the report of the fillings made here, as many report of fillings are made, will be a jumbled mass of which you can get neither head nor tail as to whys and wherefors. We have made fillings of amalgam and measured them. Generally we have not known the age of the cut; we have not accurately known the formula. If we are going to make out what a given amalgam will do we cannot do it in that way. One of these is the Fellowship alloy, which Dr. Crouse handed us a few days ago to test. We didn't do it until we came here. I made a filling of it. He told me he had annealed that alloy more than usual in order to make the working properties better, and he wished a test made of it. It shrank 1½ points. It is just possible, with a good light, with the binocular microscope, to see that there is the least breaking of the margin. The Frost White expanded 1¼ points, which we generally regard as not very bad. I give these just haphazard as they come. Tube V shows a shrinkage of 9¾ points. The alloy was fine cut. Tube AE, supposed to be the same alloy, shows a shrinkage of ¼ point and an expansion of ¾, an excellent filling. Tube CM packed dry on the bottom and wet on the top shows a shrinkage of 1 point and an after expansion of 2½ points. This was fine cut. Another tube, CF, shows an expansion of 2½ points. These two were made, I believe, out of the same bottle of alloy, but were made with different manipulation as a test. In one the amalgam was packed very dry in the bottom and very wet at the top; in the other, I believe, packed as usual. There is no difference in result. Now, all four of these fillings are supposed to be made from the same alloy, and one has shrunk badly, the others have not. Now, here is one that I have brought with me on purpose for an illustration of the changes that occur in alloys. And mind you, gentlemen, the point that I wish to make, and that I wish you to understand before I am through, is this: That you may have an alloy that will make a perfect filling to-day and an imperfect filling next week and a still more imperfect filling in six months from now, and it may sit in your drawer tightly corked in the bottle the whole time, except you take some out to make a filling. That is, it does not remain one thing two days together; that it is continually changing until a certain change has been brought about, and that certain change I wish to illustrate with this alloy. The alloy was made by the S. S. White Manufacturing Co. and sent to me in ingot. I cut from that ingot two and a half years ago and set the bottle away in my drawer corked, and marked the remaining ingot. It was with that bottle that the first filling was made. It was followed with the microscope until it had shrunk 6½ points and was then found to be loose and shaking in the tube. The next filling was made by Dr. Reade who filed from that ingot from which the first was made. He filed enough for two fillings. Then after mixing it and sifting it he divided it in half. One half he placed in a small glass flask and placed that flask in boiling water for fifteen minutes, thus annealing the alloy. The shrinkage in that tube as shown by the micrometer was 8 points. It did not become shaky, but in viewing the two with the microscope you will find them twin sisters. The shrinkage in the two is just about as near alike as you could possibly make it. The next filling was made of the fresh cut alloy without annealing. The result was a contraction of ½ point and an expansion of ½ point, practically a perfect filling. Now, I know these to be all from the same alloy and no manner of change in the process of packing will make any considerable difference in the result. Notice now that time has made the same change in the alloy as the annealing.

It is hardly worth while to go over these alloys. I will give you some idea of them perhaps just by reporting a few. There is the Eureka alloy; one filling shows an expansion of 1½ points, and one of 1¾ points. There are some few incongruities creeping out. Here is one—Silver, 48; tin, 48; gold, 2½; platinum, 1½. Dr. Price made a filling expansion, 1½ point. That was remarkable. The alloy being reported to have been annealed, and well knowing that such a formula could not produce this result, Dr. Noyes reannealed the alloy by placing it in a flask, and put it in boiling water for fifteen minutes, and then made a filling, and it had an expansion of 1 point. It had been annealed before, but there is a mistake in that formula, and anyone who undertakes to follow that will find that it will deceive him. I have experimented with these formulæ right through this line, and they have never given this result. Mistakes are common among men who are making alloys. It does not pertain to one, but it pertains to many who are making alloys. Then here is another alloy, supposed to be the same formula, and made by the same man: Five fillings—shrinkage, 4¾, 7, 2½, 4¾, 1½ points. I will say, however, that the report of the last filling cannot be regarded as correct, for the reason that the amalgam has a strong dual movement. The filling was made and measured late at night, and it was not re-measured again until ten o'clock the next day, and the second movement had begun. The microscope shows the shrinkage of this last one to have been considerably more.

This, perhaps, will be enough. We have every grade of shrinkage, from a little expansion to a very considerable shrinkage, so that it is not necessary that we run over these. You have seen them in the microscope; but if I can get you to understand why it is, or the conditions under which these alloys shrink, and the necessity for other means of preparing alloys for our use, I will have accomplished what I came here to do. I make these reports simply to show you that the alloys we are using are totally unreliable; and, so far as the present showing is concerned, that is what I expected.

The question is, Why do alloys change, and how can we remedy this defect? Why do they change? Suppose we find a formula that makes an alloy that neither shrinks nor expands as we test it. At the next test, a month later, we find that it has changed, it does not produce the same result, and we are unable to make it do so by any kind of manipulation. Now, why? You all know very well when you have rolled your gold plate that it becomes hard and stiff. The physical property of the gold has been changed by the force, by the violence, used in rolling it out, or in hammering it, if you use a hammer. You change its physical properties again by annealing. Take your steel instruments as your plugger point, put it in the flame of your annealing lamp; you draw the temper. You change the physical properties of the metal, and it becomes soft, and its serrations batter down when you attempt to use it. A similar thing occurs in alloys. An alloy is cast. Then it is cut, either by a file or a cutting machine. The violence of tearing off those little pieces of metal, whether by the file or cutting machine, hardens that metal as though it had been hammered. This alloy is a metal that melts at a comparatively low temperature; it is annealed, or changed in its physical property, at a comparatively low temperature. It becomes annealed very slowly at the temperature of our rooms. At the temperature of boiling water it becomes annealed quickly, and is softened. It is brought to the normal condition of the alloy at normal temperatures. Why, I don't know, but the results of many experiments show that in this change from the hard state in which we find it immediately after cutting, to the soft state, as it is when annealed, *there is also a change in the relation of the metal* to mercury. We may take, for instance, the formula 65 of silver and 35 of tin. We use the fresh cut alloy. It will require about 52 per cent. of mercury to make a mass which will, when well kneaded, give good prints of the skin markings of the finger. It will set very quickly and will expand about one point. If, however, we anneal it for fifteen minutes, or put it in a corked bottle, and set it away for a year and a half at ordinary room temperature, we may make a good mass with 30 per cent. of mercury. One that will take the prints of the skin markings of the finger readily the same as the other, and it will shrink about ten points in setting. It will be soft, very soft, and set slowly, while the other will set quickly. Now, as this annealing will occur very slowly, taking a year and a half for it to occur at room temperature, we have this change going on from day to day as the alloy remains in our office. Consequently, the alloy is not alike in its working properties, nor in its results one day with another; it is continually changing. From this you will understand, I think, why, even with the same alloy, the same formula, in such a test as we have been making here, we get such different results. It is simply that we get that which has been cut different lengths of time. With these facts before you, you will understand that we could not do otherwise than get various results from the same alloy. It is these various results that we are getting from the same alloy that we want to avoid in the use of the material in filling teeth. It is these various results that we have not been able to avoid in the past. We may make a perfectly good filling of this alloy, one that we will be proud of years after, yet other fillings will come back made from the same bottle of alloy, that we will look at and feel ashamed ; made seemingly under the same conditions, with the same material, with the same care. A gentleman said to me not long ago, " It does seem that those men who slop in their amalgam fillings in any way are doing almost as well as I can do with all my care, and I am discouraged."

Now, as to the shrinkage. What is it we want to do in filling teeth ? We want, first, absolutely to exclude moisture ; second, we want absolutely to exclude micro-organisms. We want to exclude both. We have made our measurements to the ten-thousandth of an inch. Microscopists use the micron for their measurements. There are two and a half (roughly stated) microns in one ten-thousandth of an inch. The micro-organisms that we habitually find in the mouth average about six-tenths micron in breadth. A whole army can march in through the cracks, you see, beside these fillings. A whole army of those micro-organisms can march in. Now, our object is to exclude these. A less break than any we can see with the microscope by reflected light will admit micro-organisms. Indeed, with these lenses, you cannot see one of these individual micro-organisms. You will have to take a lens of greater power to recognize one of them.

Now, how are we going to prevent these changes ? We do it in this way. We find a formula for an alloy which, upon careful trial, careful test, will make an amalgam that, when fully annealed, will neither shrink nor expand. Mind you the conditions. Find a formula for an alloy which, when fully annealed after cutting, will make an amalgam that will neither shrink nor expand. This must be found by careful test with suitable instruments in each individual case. If the alloy is annealed to the point of softness normal to it at normal temperature, we may expect it to be as permanent as any other metal, and the results of our investigation show that it is permanent. One of the alloys here, the Frost White, has been cut six months. I am not absolutely certain that I made the test of that particular alloy, but I suppose I did, as I was making tests for the man who made it at that time. It has not changed since. Two years ago, in April, I put up the first annealed alloys. I put them up in bottles after annealing, and have left them stand until the present time, making fillings occasionally. I made tests just a short time ago from these. They have not changed now in nearly two years. They make just as good a filling, and work just the same as they did then. Now, this length of time of experiment is all I have to give you. I have not five years, and I cannot say what five years hence will add to present knowledge, but I have every reason to believe that they will be permanent.

Now, can this be done in the ordinary course of manufacture? Most certainly it can. Men can work so closely that their alloy should not expand nor contract more than one point across a central line, within a half point of absolute perfection. It is perfectly possible that this can be done. How? First, by accuracy in casting the alloy; second, care in cutting; third, accuracy in annealing; and this process cannot be done haphazard. Accuracy in annealing, and last, and most important, if possible, accuracy in the test of each batch before it goes on the market. To do this we will have to have the instruments by which these tests can be reliably made, and we will have to have acquired sufficient skill in their use. Now, can any part of this be done by the ordinary methods? By the ordinary methods there will be great difficulty in casting the ingot of alloy. It has been done heretofore in the open fire, and more or less metals are oxidized in the fire in melting for this cast. When we put a thousand grains into our crucible to melt, we don't get a thousand grains of metal in our result. Something has been lost by oxidation. If we cast in this way we will have to allow for that oxidation, for a difference of one-half of one per cent. will come out in the results when we come to test with these instruments. *Our formula must be accurate.* We can have a good many of them. We are not confined to any one formula. We can have a whole lot of different alloys, differently constituted, *but we must be accurate.* Recently, I have had an electric crucible made, heated by electricity. The crucible is closed, and while melting, a stream of illuminating gas passed through the crucible, which you all know is a deoxidizing agent, and with that I can pour my metal and have the same number of grains in my ingot that I put in my crucible—(applause)—and with that instrument, as it will undoubtedly be perfected and adapted to large quantities in the near future, we can make an ingot very exactly. When we can do this there will be little difficulty in doing the rest. But let me tell you this: I see that a number of men are putting out amalgams which they speak of as annealed. You should remember that they cannot know whether these amalgams are right or wrong unless they have proper instruments to make the test before these amalgams are put on the market. They cannot know anything about it. It must come down to this, gentlemen, that you must require of your manufacturer, or your dealer, that these tests be made and be made accurately. Then, we can have amalgam that will neither shrink nor expand.

Now, will we have perfection in filling when this is done? Perfection in filling with amalgam! No. The amalgam may be one that will neither shrink nor expand, but we will not then have perfection in filling with amalgam because there are very few of us who can make perfect amalgam fillings even then. There are very few fillings that have been made here, though they have been very good, very excellent, the best I have ever had of this kind, yet there have been very few, my own included in the number, that were perfect, that showed perfect margins to begin with. Amalgam is a very difficult material to manipulate perfectly. When I first said this publicly, Dr. Crouse thought he could make an amalgam filling that was perfect. He went to work and tried and soon found he could not do it, and said so. Another thing. Many of our amalgams are too soft to be really valuable in filling teeth. You suppose that this amalgam is a hard, brittle substance, because when you strike it with a hammer it flies like glass. So it does. It is hard and brittle in one sense, but there is another sense in which amalgam is very soft. I hold in my hand a little tube in which I have two blocks of amalgam. They were both just alike yesterday. They were made in the same die and were just alike, but I put one of them under a pressure of 60 lbs. and let it remain under that pressure for a time. Now, I will pass that bottle among you. You will see it has not broken, it has simply flattened out. The amalgam flows. Here is the instrument in which these blocks are made (exhibiting). Now, you see that it falls to pieces on taking out a pin, and when the pin is in place it is ready to make fillings. You see there are several cavities of one size ; we file them, take out the pin and remove the fillings. Now, I will put into this dynometer a block of amalgam. First let me explain the instrument (exhibiting). Here in this piece of the instrument I have a micrometer. Between these two points I can put in a substance and make a measurement of it in thousandths of an inch. In this part of the instrument I have a dynometer in which I can put stress upon that piece as placed anywhere from 1 to 400 lbs., and in this other instrument up to 600 lbs. Or I can put on the pressure and let it rest. In these instruments we may test the strength of different amalgams, and we find they have a wide range in strength. Now, I will put in a block of 40 of silver and 60 of tin, one of the soft alloys. Now, I want you to notice this. You see I have two needles here. I have put them exactly together. If that block of amalgam shortens, the black needle will move and the other remain to mark its place. Now, I will put stress on that and you watch the needle. I will run the stress up to 60 lbs.; there I will let it stand. You will notice that this needle is crawling, it is moving, the amalgam is flowing under that stress. I will set it up here and you will notice the needles part more and more. You will notice that that needle will very slowly keep moving and that the stress is diminishing, as shown by this other needle. Now, while you are noticing that flow I will try the crushing of these. Just two or three blocks of certain amalgams that are different from each other to show you something of the difference in strength of different amalgams. This we regard as a soft amalgam (puts one block in micrometer). Now as I begin running up the stress you will notice those needles of the micrometer parting. There, it is broken at 200 lbs. I have another of the same. These blocks were made with as much care as I was capable of, and they ought to break at a pretty definite figure. (Another block put in of same material and breaks at 205.) Now, I will take another amalgam, one made from an alloy of 69 of silver, 27 of tin, 3 of copper and 1 of nickel. This will illustrate to you the influence of nickel in alloys. (Puts in micrometer and breaks at 80 lbs.) Now, I will take another alloy that is very nearly of the same formula, that is about 68 of silver, 26 of tin, 4 of copper and 1 of zinc. You see practically the zinc replaces the nickel in the alloy, and I want you to notice carefully the parting of the needles in this case. (Breaks at 350 lbs.) We will try another block of that. (Makes another trial of same substance, which breaks at 390 lbs.) The difference in the flow is very remarkable in these alloys. In the tests of that alloy that I have made there has been regularly an expansion of the batch from which these blocks were made of ½ point. (Tries another block of same. Breaks at 465 lbs.) I generally expect blocks made from that alloy to break at about 400 lbs. Some of them have broken at a little less than that, and I want to say that if any of you undertake to make these blocks for the first time, and get them to break within 50 lbs. of each other, you will do very well. These blocks are 8-100th of an inch square. When I first began making blocks for tests I found that I could not make blocks out of the same mix of amalgam that would break anywhere near each other, and I was disgusted with myself, but after careful study and by using care in the handling of the mass and in the packing of it I got better results. Well, that is enough to show you that there are great variation in the strength of amalgam and also that there is great variation in the individual blocks made of the same mix. We can make a block that will bear a stress of 400 lbs., or out of the same mix with amalgam apparently perfectly packed, we may make a block that will break at 100 lbs. or 150 lbs., depending on the manipulation. But I cannot go into manipulation now. We will notice these instruments again. (Refers to dynometer in which an alloy was under pressure.) You see the amount of flow. You see that the pressure we applied at 60 lbs. has been reduced by the shortening of the block to 50 lbs., but the shortening of the block continues. Now, gentlemen, gold don't do that. I will put a block of gold in the other instrument and try to explain to you the difference. This is a block made by Dr. Johnson. It has been in my micrometer once before about three years ago and the block was longer than now. I will put 150 lbs. on it. All the flow it will make has been made. It will stand right there. It was under that pressure for two hours before. You will see that the needle now does not move, and we may set it up here till the middle of next week and it will not move. Now, this is the difference between amalgam and gold as to sustaining stress. If I put on more stress I will move the needle, but it will move immediately and then will stand. Amalgam will keep crawling even though we diminish the pressure. Now, right at this point, and to enforce the importance of it, I gave this instrument (instrument for testing strength of the bite with the teeth) to the young men here yesterday and asked them to bring me a record of what they could crush with their teeth. This is a knathodynometer for measuring the force with which we may bite, the pressure that we exert with our teeth, and I also have another instrument for measuring the force required for the mastication of the different articles of food. I didn't bring that with me. I want to read you some of the figures that the young men brought me here in this school yesterday. On the incisors, 65, 75, 90, 100, 95. On the molars, 205, 220, 185, 95, 185, 210, 110, 200, 180, 195. This instrument registers 270 lbs. and the next fellow shut it up. (Laughter.) In an exhibition, a day before I left Chicago, before my class, one of the members of my class bit down 260 lbs. with his incisor teeth. Now, gentlemen, this illustrates to you what it is we have to provide for in filling teeth. It shows you this, that we must have the strongest amalgam that we can make to endure the stress. You see how they flow, how they move with stress, and unless we have anchored them well, and have the very strongest amalgam that we can make they will move so as to leak, even if the amalgam does not shrink. Now, I have perhaps taken up as much of your time as I should. I want to hear from others, and afterward I will be glad to answer any questions that I can.

Dr. J. B. WILLMOTT—One point that you made yesterday morning I should like to have you make for the Society. That is the range where contraction commences and expansion commences in tin and silver alloys.

Dr. BLACK—The range at which contraction ceases and expansion begins. If we take the unmodified silver tin alloys—and when I say unmodified silver tin alloys I mean an alloy in which there is nothing but silver and tin—and begin at 40 of silver and 60 of tin we will first get a shrinkage and afterward an expansion, a dual movement, as is seen in many of the alloys we have tested here. As we increase the amount of silver up to about 60 per cent. that dual movement ceases. The contraction ceases, if we use fresh cut—and that "if" must always be put in in speaking of alloys—and when I say fresh cut I mean within one hour after the cutting, not longer. We must be exact. At that point, 60 of silver and 40 of tin, we get no shrinkage. With 65 of silver and 35 of tin there will be a slight expansion, that expansion will increase with the proportion of silver until we have reached about 74 of silver. At that point we will get a large expansion, but an expansion that may be removed by annealing. An annealed alloy of about that constitution will neither shrink nor expand. Adding more silver we will be unable to remove the expansion entirely. By annealing we will remove it in large degree, but it will still expand some. Therefore, in the unmodified silver-tin alloys we are confined closely to our formula. Heating it in the open fire some will want a little more silver and some less, depending on how much oxidization we get. But when we come to use the electric crucible I think we will have no reason to do that. If we add other metals, then we have the conditions changed immediately. For instance, copper increases the expansion very materially. Lead diminishes it a little. For instance, taking 65 of silver and 35 of tin on such a basis for trial we found that the gross expansion was 1 point, then adding gold we got 4 points expansion; adding platinum it was 1 point expansion again; adding copper we got 23 points expansion; adding zinc we got 68 points expansion; adding cadmium we got 100 points expansion; adding bismuth we got no expansion. These additions were 6 per cent. in each case. Adding aluminum, 5 per cent., we get 445 points expansion. With aluminum, 1 per cent., we get 166 points expansion. Dr. Noyes will show you a tube filled with aluminum alloy (tube shown). Now, you will see with these modifications by different metals we can obtain a large range of formulæ and yet have alloys that will neither shrink nor expand when fully annealed. We are not confined to any one alone by any means.

Q. When you add copper, that will permit a larger per cent. of silver, as I understand?

Dr. BLACK—You mean a larger per cent. of tin?

Dr. J. B. WILLMOTT—Yes.

Dr. BLACK—It modifies it also in making it very much harder. Copper increases the strength of the alloy. Also zinc makes the amalgam stronger. I found that nickel did not do as I thought it ought. Nickel simply ruins it. It has no strength at all. One per cent. of nickel simply ruins an alloy.

Q. What effect has gold?

Dr. BLACK—It makes it work a little bit softer, that is about the only effect it has.

Q. Less shrinkage?

Dr. BLACK—Not particularly.

Q. Does it make much difference in the order in which these are melted?

Dr. BLACK—It don't make any difference. Gold has not any considerable influence, either on shrinkage or expansion; very little influence, indeed, except that it makes the working property a little bit softer.

Dr. JOHNSON—I should like to ask your opinion of an amalgam that works beautifully and handsomely in the hands of an operator as to its effectiveness in the mouth and as regards its permanency.

Dr. BLACK—I think that question is an important one, and I might spend a long time talking about the matter of working property, but I don't intend to spend but a few minutes. An amalgam made from filings of coin, as most of you know who may have tried that, is a very harsh, gritty and granular stuff. We have run that down by adding tin until we arrived at a beautiful, soft working property, and we find the alloys shrink, but that is not all. It is found absolutely impossible to make a filling that has perfect margins with those soft amalgams. You put an amalgam of that kind into one of these tubes or into a cavity and try to finish it perfectly at this side and you find it has opened at the other side. It is soft and springy, and when you try to bring it up again it springs away at another point, and will keep doing this. This is what it will do, as seen by the microscope, in the tube; and it will do the same thing in the teeth. In order to have an amalgam that you can work with reasonable perfection in filling teeth it must be stiff when made up; one that when you put your instrument on it and compress it you find that it is immediately hard and stiff and will therefore stay in place. Fortunately it so happens that the amalgams made with large proportions of silver will do this. Particularly the amalgams made with a small addition of copper do this to a remarkable degree, so that while your amalgam works soft to begin with, you will find, after working with reasonable rapidity, about the time your filling is finished it will be so hard and stiff that you will not be forcing it this way and that. You can put pressure on one side and force it up to the margin and find you have not moved the other side. Now your amalgams must get into that condition before you will be able to make a perfect filling, and it will not have that very soft, velvety feel that the amalgams that we have been using lately have. I find it impossible for me to make a good filling with those soft amalgams even if they don't shrink. I don't think anyone else ever can make good fillings of them. In order to make good fillings we must so temper the working property of our amalgams that we can have them stiff at the time we finish our filling. We can make this annealed amalgam so that it will work soft or hard as we please, but after we have annealed and produced the condition of non-expansion we can make the working property very soft if we choose. If we have control of shrinkage and expansion we can control the working property. We can make amalgams containing seventy-four parts of silver work very soft and be a long time in setting, but it would defeat us to do that. We must have our amalgam work stiff, gentlemen, or we cannot make good fillings. (Applause.)

The PRESIDENT—I would like at this juncture to introduce to you a gentleman that has come with Dr. Black from Chicago, in a certain sense as his assistant—Dr. Noyes of the Northwestern University of Chicago, the Dental Department, and I take great pleasure in extending to Dr. Noyes the courtesy of the floor and have him say something to us.

Dr. NOYES—I thank you very sincerely for this courtesy, which I appreciate very much indeed, and am very glad to have a chance to say just a word in regard to these amalgams, which I think may be of interest to you. Very shortly before we left Chicago we had in that city the tenth anniversary of the Odontographic Society for the Clinic of which I was asked to give an exhibition of some of the amalgams on the market, and I think perhaps you would be interested in hearing the report to that Clinic. Before I do I want to say just one word in regard to this little instrument, although the Doctor is present. In the preparation of that Clinic there were forty-five fillings made, and each one of these fillings was measured from five to fifteen times. A great many of them produced a movement which was accomplished in about two days. The work of the preparation of these fillings was stretched over ten days, and on each day, two or three times a day, all the fillings that had been made were measured. I wish to say that that instrument acted in a way which seemed to me to be truly remarkable, although I have had some experience with physical instruments for measurement. We found that after the filling had completed its movement it could be measured ten times, one time by myself, the next by Dr. Black, and so on indifferently, Dr. Black or myself making the measurements, and record exactly the same reading.

Dr. NOYES then read from report to the Odontographic Society, entitled, "A Series of Tests of Amalgams as to Shrinkage and Expansion."

The first point which Dr. Black developed was the annealing property of alloys, briefly stated as follows : The cutting of the alloy changes the action of the filings towards mercury so that they require more mercury to amalgamate them and in setting the changes are brought about more rapidly. Heat returns the filings to their normal condition so that they require less mercury to amalgamate them, the setting is less rapid, and the shrinkage-expansion property is changed. If when fresh cut the amalgam did not change its bulk in setting; after annealing or tempering (as Dr. Black calls the effect of heat on the filings) the amalgam will shrink ; if when fresh cut the amalgam expanded greatly, after annealing it will not expand so much or may even shrink. This change may be accomplished at the temperature of boiling water (220 F.) but it goes on slowly at the ordinary temperatures so that in a year or two the same change in the action of the amalgam will be brought about. This is beautifully illustrated in the four fillings reported near the end of the table Nos. 39, 40, 41, 42. When once fully annealed the alloy does not change at ordinary temperatures.

Dr. Black showed that silver-tin amalgams present peculiarities in shrinkage and expansion with various proportions of silver and tin. In alloys of 45% silver, 55% tin, there is a strong double movement ; that is, in setting they first shrink, then expand. If the filings are fresh cut, the shrinkage is small, the expansion great ; if the filings are old or have been annealed, the shrinkage is great, the expansion small. In alloys of 65°/o silver, 35°/o tin, the double movement is small. Fresh cut they expand but slightly; annealed, they shrink about 9 or 10 points. Alloys containing more than 73 or 74°/o of silver expand very much when fresh cut; annealing reduces the expansion, but they cannot be made to shrink.

Dr. Black showed that the addition of a small per cent. of certain metals to a silver-tin amalgam will make it expand in spite of annealing, and, unlike the expansion of the silver-tin amalgams, it is not completed in a day or so, but will continue to do so for weeks or months. Both aluminum and zinc act in this way; refer to tube X No. 29 in the table, which contains 5°/o of zinc and had made an expansion of 7 points in ten days and was still expanding when the filling was removed on the 25th inst.

If you will notice the four fillings of Dr. Black's 65-35 at the end of the table, you will see that one ingot was cast in July of 1896, half of the ingot was filed and the stub kept. From this stub filings were cut and a filling made fresh (tube I), which expanded 3¼ points ; from the filings that had been simply kept in a bottle since 1896, a filling was made (tube J) which shows a shrinkage of 9 points. A new ingot of the same proportions was cast and half of it filed ; the filings were divided into two portions ; from the first a filling was made fresh (tube Z), which expanded 2¼ points ; from the second point a filling was made after the filings had been exposed to the temperature of boiling water for seventeen minutes (tube O); this filling shows a shrinkage of 9¼ points, so that the aged and annealed filings gave the same results within one forty-thousandth of an inch.

That annealing is permanent in its effect is shown by the last filling in the table which was made by Dr. Black from filings cut and annealed a year and a half ago. The filling made from the filings immediately after annealing gave the same result as the one reported here.

Thus far we have been showing what can be expected of an alloy for a dental amalgam. How do the alloys on the market show in the table? Look at all the alloys manufactured by the regular dealers: Pearl, Fox & Gerheart, S. S. White's Alba, Chicago Dental Manufacturing Co., etc., etc. They all shrink, the shrinkage increasing as they are kept until the limit of shrinkage for that alloy is reached. The only alloys that do not show a shrinkage are: first, the few that are annealed and tested before they are put on the market, namely, "The Fellowship," Dr. Kester's "Frost White" and his "Specially Tempered," and Dr. W. E. Harper's; second, the alloys which contain aluminum or zinc; these expand, but the movement is too long continued and is liable to be accompanied on the second or third day by a pause in the expansion and a slight contraction which opens the margins.

Shrinkage or expansion is a property of the alloy and cannot be controlled by any method of manipulation, it may be modified more or less (usually less) by manipulation but it cannot be prevented.

As evidence on this point, please note the fillings which are marked with a star in the table. Tubes D and AL of Goldsmith Bro.'s alloy were filled by Dr. H. Alfred Gunther (tube AL) and myself (tube D), using very different manipulation, mine being made by the method adopted uniformly for all the test fillings, he using a special method with the idea of controlling the shrinkage. You will notice that their extreme movement was within 1 point of the same. His shrinking 7 points and coming back 2; mine shrinking 8 points with no return movement. Again, tubes AA and B, of Fletcher's alloy. Tube AA was packed by Dr. J. D. Patterson, using the Fletcher method, tube B in the regular way. You will notice that their movement is within one forty-thousandth of an inch of the same.

These are the points from that investigation. I think there is nothing more I can say either about that or about this. (Applause.)

The PRESIDENT—I will now call upon Dr. Harold Clark to open the discussion on this question.

Dr. CLARK:

Mr. President and Gentlemen,—I regret that our programme-maker had not selected someone of more years of experience in the handling of amalgam to have opened the discussion, or replied to Dr. Black's paper. As for discussing of the paper that I cannot and will not do. I felt as Dr. Black was giving his talk, that here and there I had some questions to ask. He has shown that he is not only a great scientific investigator, but that he is in a very high sense a teacher, because as each question raised itself I jotted it down. I felt that that was one of the questions I must ask. I did not wait long before every question was very carefully and fully answered, and I simply had to strike it off. I have looked forward to Dr. Black's paper with a good deal of interest. Like all of you, no doubt, I have, even in the few years I have practised, been confronted with the difficulty that has been nothing short of a mystery. I have tried conscientiously to put in amalgam fillings that were as nearly perfect as possible. I have been careful to select what I thought was the best alloy. I have availed myself of every article in journals on the subject, and still I would find some fillings which seemed to be perfect, and yet others made from the same alloy, and as far as I knew under similar conditions, were very imperfect. We owe a good deal, of course, to Dr. Black for his many investigations, and many things he found out and told us regarding alloy. It seems that Dr. Black has got the clue to the mystery, if he has not yet even solved it, by which we may have an alloy that will make as perfect a filling as we can get out of amalgam. I have no doubt some have already the question in their mind, Can he tell us now what that alloy is ; if it is manufactured, where can we get it. I cannot help referring to one or two points of the lecture that to me seemed almost marvellous, and that was the manipulation seemed to produce no difference in the result. And the other point is the effect of ageing. Did not I understand you to say, Doctor, that once annealed the property remains the same? It does not change after you anneal?

Dr. BLACK—Yes, Sir.

Dr. CLARK—There has been nothing said about the color-keeping properties. I don't know whether we are to learn something about that or not. There is another question I want to ask about the flow. Does the formula that most nearly produces the ideal flow, less or more, than other alloys that are otherwise not so desirable?

Dr. BLACK—The flow is most in the alloy that has most tin, less in the alloy that has most silver up to 75%. It increases again after that. I will refer to this instrument again (refers to dynometer in which gold block has been placed under 150 lbs. pressure). This gold block has been under that pressure of 150 lbs. and the needles have not moved, and I may say that they would not move at all in a week. The gold will sustain the stress permanently. A block of tin will flow from under a pressure of 15 lbs. The more silver put in it the less flow. Copper diminishes the flow. These are important points, particularly when we get patients, as well as students who will bite down 270 lbs.

Dr. CLARK—Have you anything to say upon the color keeping properties of amalgam?

Dr. BLACK—I have not made special investigations of that, but I have noted this fact prominently, and that is, mercury is the whitest of the metals that we put in alloys, and the more mercury required by the alloy the whiter the amalgam. Alloys containing zinc are whiter than the alloys not containing zinc. I would like to hear Dr. Johnson's views on this question of a perfect amalgam.

Dr. JOHNSON, Chicago—Dr. Clark raised the question and wished Dr. Black to answer it. What particular amalgam would uniformly give you the best results? I simply want to tell you that if he gave you that formula you would not use it. That may seem like a plain statement, but I make it based on the experience that we have had in Chicago. What is the condition in Chicago to-day? The men who are selling the most amalgam are the men who sell these soft amalgams, that go just like this amalgam under a pressure of 60 lbs. Why? Simply because it is hard work to insert a good amalgam. You can take this soft amalgam and slap it into the cavity, and it will not set too soon. You can probably read the newspaper and gossip with your neighbor while it is setting, and I tell you the majority of the dental profession are looking for soft snaps. Now, that is why men use these amalgams, and until they are forced to use better by virtue of keeping records of their own work, and studying their failures, they will not do so. I have been using in recent months this amalgam that has stood up under this enormous pressure of 400 lbs., but it is difficult to manipulate. We are not talking about gold to-day, but there is one thing about gold, and that is, it is uniform in its results; you take a piece of gold and put it against the walls of the cavity and condense it and it stays. Take the ordinary amalgam and put it into that cavity and condense it against one margin, and you pull it from the other. The more I see of this amalgam question the more I hate amalgam. We see the records of amalgam filling where it has been in for a great many years, but we don't see a record of the failures. I do hope this, that when an amalgam does come out with the endorsement of such a man as Dr. Black, that you will have the courage of your convictions, and use it even if it is harder work.

Dr. WILLMOTT—I don't propose to discuss this matter except one aspect of it. It is the relation of the percentages of the silver and tin to stability in an amalgam filling. It might be of interest to the members of the Society for me to read a few formulas that we have been in the habit of using extensively. (Reads from book number of different formulas.) I have been studying the reports of these experiments for some years, and I have come to the conclusion that amalgam as we use it, is a thoroughly unreliable filling material. One thing that has been quite clear to-day will be the putting on the market of an alloy that has been already annealed, so that whatever it is at one time, we may expect it at another. It will always have the same characteristic. We are just at the mercy of the manufacturers in this respect just now, and until some manufacturer makes an alloy that will always be the same, we are at their mercy. We had an illustration of this the other night before the Clinic. One of the members of the Toronto Dental Society said that he made some fillings some years ago, at least some time ago, and he saw them occasionally, and they were beautiful fillings, and they kept beautiful, and he thought this was a very fine alloy, so he brought a sample of it and made a filling before the Clinic, and before it was over he was talking about crawling all around that filling in the tube, it had shrank to such an extent. Now, the probability is that he got it fresh cut, and now it has got annealed by age, and it is not worth anything at all. One thing, we will have to go on using the present amalgams until we have something better made. There is one question I want to ask, and it is this: Whether the partial success of amalgams as we have been using them, is or is not due to the antiseptic property it exercises, especially if it contains copper?

Dr. BLACK—Well, I don't know that I can answer that question satisfactory to myself. I venture this. If the amalgam filling is perfect, no matter how much the amalgam blackens, the walls of your cavity will remain clear and bright to the margin of the filling, as much so as if the filling had been made with gold. If the margins are imperfect it will be discolored. If we take a silver pin and thrust it through the flesh, as in surgery we often do, we will find all of that outside blackened after a few days, but if we remove it we will find that that portion of the silver which is in contact with the living tissue is bright, has not lost its color. Just so with the amalgam filling. I hope that some of these days we will see our amalgam filling standing, perhaps black, with the margins of the cavity of the teeth perfectly bright up to the margin. We see it in our gold fillings. Now, if there is any antiseptic imparted to this material it is not sufficient to prevent decay. That is certain, because we do see decay progressing right alongside amalgam.

Dr. CLARK—I want to know if there is any amalgam that we can purchase now that will give good results, and who makes it?

Dr. BLACK—I can tell you what I know about that. I have myself nothing to do with the manufacture and sale of alloys. I hold aloof entirely from that. A dentist, in Chicago, I know, has been studying this subject, and has been making alloys more or less for sometime, and he has tried to make these alloys. Unfortunately, he has not properly equipped instruments yet, and is depending on somebody else for examination of the alloys. The Dental Protective Supply Company has been making a great effort in this direction, have been studying this subject closely and experimenting. Their instruments are not as perfect as I could wish. A number of specimens that I have examined for them, I have found very close, generally within one half of one point. I don't know of anyone else who has undertaken to provide themselves with instruments except the Dental Protective Supply Company. I have agreed to give a course of instruction, especially for amalgam makers this next summer. How many will avail themselves of that course, I don't know. If they will undertake that, I think they will learn to make alloys, if they send men who have already some experience in the handling of physical instruments. A man totally ignorant of physical instruments cannot learn to use them in six weeks or six months.

Dr. CÆSAR—I would like to ask Dr. Black if he were to take an ingot of the best alloy that he knows, and filed from that sufficient to make several fillings, and at same setting insert them in the mouths of different patients, if he can always depend upon the same result. I would also like to hear Dr. Johnson's views on that point.

Dr. BLACK—Do I think that fillings made with the same amalgam, practically upon the same day, for several different patients, will be equally satisfactory? Yes, if each of the patients is fifty years old, and the evidences are prominent that decay has practically ceased in all the cavities of each mouth. But if a young girl comes in to me with decay rapidly advancing, and I attempt to compare her teeth with those others, it will be an entirely different case. We cannot compare results in that way, and expect that they will be equally satisfactory as results. The conditions are not the same. Fillings of the same alloy in different mouths will not be equally satisfactory, and even with gold, with the best of our efforts, we will not get equally satisfactory results with different people. No, the results are very different. With gold less so. You see, gentlemen, that the gold under that pressure (referring to the gold block under pressure) remains the same. The gold does not condense under that pressure, but stands firm; but the amalgam is flowing completely away. Gold is the king of filling material.

Dr. JOHNSON—There is just a feature of that question that I don't think Dr. Black quite grasped. Dr. Cæsar, in asking this question, referred to a similar class of patients, as I understand,

and he wanted to know whether the amalgam would behave the same in the same class of patients. You may have noticed that we may take one patient, and put in a filling; and we may take another patient of the same age, and, as near as we can judge, with the same tendency to decay; we may use the same alloy with the same care, and in six months we see those two cases, and they are vastly different in their results. Now, there is just one feature of that I want to speak on, and a point we too often overlook, a thing that Dr. Black just touched upon, and that is the difference of mastication in those mouths. There are patients who will crush these amalgam fillings so as to batter them out of shape, unless we have an amalgam filling that will stand up under pressure. We may put in a filling of amalgam in one patient and it will stand all right, and there are other patients who will simply crush that out of the cavity with mastication without any trouble at all. We have to take into consideration the question of the resistance against stress of mastication. I agree with Dr. Black, that we do get more uniform results with gold, and I want you to consider that gold is the best filling we have.

Dr. CAPON—In speaking of gold, is there any virtue in putting a layer of tin in the cavity, and then a filling with gold? It is a thing that I have been using more or less.

Dr. JOHNSON—As to the advisability of placing tin at the cervical margin in these large cavities in molars, I have not any experience with tin alone. I have with a combination of tin and gold, and I am of the opinion that the main virtue that we get from that combination is the facility for the adaptation to that margin. We simply make upon that cervical wall a cushion upon which we can condense our gold without injuring the enamel under that condensation, and I want to say there are some places where it is a most excellent method.

Dr. WILLMOTT—In reference to the question which Dr. Cæsar has just asked, I have a very profound conviction that the difference in the service of an amalgam filling, or a gold filling in one mouth and another mouth depends very largely on the hygienic conditions of our patients. Here we have a whole culture bed of micro-organisms absolutely in contact with our filling, and how can we reasonably expect that that filling is going to escape? If we could see that the teeth of every person was in a hygienic condition, I don't think there would be the difference that exists in the various mouths to-day. Then, some patients take very much better care of their teeth than others. Some take the particles of food between the teeth away by cleansing them, and others do not. I think that the operator is not responsible altogether for the success or failure of his operations; that the conditions which are forced upon us in the mouth have a good deal to do with failures, and the conditions which are under the control of the patient and not under the control of the operator have a good deal to do with the success. If we could get perfectly hygienic care for mouths our success would be very much better.

Dr. NOYES—In regard to these different amalgam fillings, I would like to suggest that if the different patients are steel tubes the results will be identically the same. If they are ordinary folks they won't. If they are steel tubes, you have eliminated all the varying conditions.

Dr. CÆSAR—But remember that our patients are not steel tubes, unfortunately. I don't expect that one patient is going to keep his mouth perfectly cleansed and sweet and nice, and the other patient is going to have a hatchery in his mouth by any means. I am supposing, as Dr. Johnson comprehended the question, that the fillings are put in about the same day and under the same circumstances. Will that amalgam act the same provided that we have physically the same class of patients in each case, and they keep their mouths in similar conditions?

Dr. NOYES—The difference in the action of these same fillings in the different mouths is not due to the amalgam, but it is due to different environments, differences which are ordinarily not taken into account. If you eliminate all of these possible differences you must get down to the steel tube.

The PRESIDENT—I am afraid we cannot spend any longer time on this question unless there is some specially important question that has to be asked. I will ask Dr. Black to close the discussion.

Dr. BLACK—In closing this discussion, I want to express my gratitude and my thanks to the members of the Society for the assistance they have afforded me in making these demonstrations, and for the uniform courtesy with which I have been met here. For all of this I thank you.

Dr. MARSHALL—In view of the fact that Dr. Black has gone to so much trouble in giving us this excellent talk, I think it would be a very nice thing for us to extend to him a vote of thanks. It affords me very much pleasure, therefore, to move a vote of thanks to Dr. Black.

The PRESIDENT—It has been moved and seconded that this meeting tender Dr. Black a vote of thanks for his instructing us on the question of amalgam. (Carried.)

It was moved and seconded that the place of meeting for the Ontario Dental Society for next year be left to the Executive.

Question Drawer.

Edited by DR. R. E. SPARKS, M.D., D.D.S., L.D.S., Kingston, Ont.

Q.—35. In cases of bridge work, where the bite is close and the dummy broad for occlusion, the gum becomes congested, filling up the place left for cleansing. This is particularly noticeable where a dummy is placed between two natural teeth. Can this be prevented? or is there any advantage in leaving a cleansing space where such is likely to occur?

A.—1. I should certainly leave a cleansing space. It need not be large, but sufficient to allow the mouth wash to reach every part in rinsing the mouth. Turgescence of the gum is less likely to follow if such precaution is taken. Such a dummy should if possible be carried by two strong piers to prevent any pressure upon the gum in mastication. I would also curtail the surface for occlusion.

A. A. SMITH, Cornwall.

2. Yes—By keeping the dummy away from the gum, or the tip of the porcelain may touch without exerting pressure enough to prevent the free passage of air or fluids.

J. E. OVERHOLT, Hamilton.

3. Yes—There seems to be a tendency for the gums to grow over the facings, but space should be left and astringent mouth washes used.

J. G. ROBERTS, Brampton.

4. Make the gold crown to fit very close over the natural tooth, burnishing the edges under the gums, making the cusps (if a bicuspid or molar) broad and in such a way that the food will not wedge between the teeth. W. B.

5. In bridge work, where the bite is close the dummy should never be wide, as it would surely interfere with cleanliness. Better not insert a bridge than cause any insanitary or abnormal conditions of the surroundings.

The only obvious method for the no space theory would be a removable bridge. If the object of the bridge be simply mastication a prism shaped gold bar would take up much less space than if dummies were attached, and will serve admirably for occlusion in cases of short bite.

OBSERVATION.

Q.—36. What is the best method of bleaching a tooth discolored after the use of arsenic? Is the discoloration likely to return? If so, why?

A.—1. Treatment by means of Cataphoresis is by all odds the most successful and easily accomplished method to bleach teeth regardless of the cause of discoloration. A fairly strong solution of pyrozone, Sodium peroxide or the old stand-by alum, chloride of lime and acetic acid, if administered by this means, will produce the most satisfactory results. The apical foramen must be stopped and the canal filled nearly to the cervix before treatment, then carry the bleaching operation too far, line the cavity with cement, suitable for the desired shade, and finally fill. From observation we are inclined to an opinion of our own in respect to the darkening of the tooth after the operation. The enamel gets thoroughly dried during the treatment and turns light in color, then in getting moist by the surrounding conditions when the dam is removed, it goes back a little, so to speak. Who has not observed the change that takes place during a long operation where the rubber dam is used? Almost any tooth protected from moisture for a couple of hours will assume a very much lighter shade, but, in the course of a short time after the dam is removed the light shade will change back again. D. D. S.

B.—2. Hydrogen Peroxide and Chloride of Aluminum. If discoloration returns it is because the action of the bleaching agent has not been continued long enough, or the tooth has not been bleached sufficiently high up into the root, or the use of metallic, instead of bone or hard rubber instruments, imperfect root filling etc. J. E. OVERHOLT.

Q.—37. How may we diagnose an abscess in the bifurcation of the roots of a molar.

A.—1. Oftentimes extremely difficult; but, in some cases, a close examination will reveal an inflamed and even ulcerated margin of the gum opposite the bifurcation, either on the lingual or buccal surface. This point of gum tissue will respond to the actual condition of the abscess, as it is, in fact, the fistula of the abscess. If $H_2 O_2$ be injected into it you will find immediate effervescence in quantity marked enough to prove the presence of pus.

A. A. SMITH

A.—2. application of ice or jet of cold water on tooth crown, if abscess has not extended far enough to destroy vitality of pulp.

J. E. OVERHOLT.

3. I don't think it possible (in all cases) to locate the exact position of an abscess in molars. W. B.

QUESTIONS.

Q.—46. In Dr. Black's experiments with amalgam fillings at the recent meeting of the O. D. S., at Toronto, it was found that out of thirty-five fillings inserted in cavities in steel dies, only seven were perfect enough to have preserved teeth in the mouth. Many of the imperfect fillings were made from alloys which have been in use in the dental profession for a great many years.

How may we account for the preservation of teeth which we know have been preserved by fillings made of these imperfect alloys?

Reviews.

Descriptive Anatomy of the Human Teeth. Fourth edition. By G. V. BLACK, M.D., D.D.S., Sc.D. Philadelphia: S. S. White, Dental Mfg. Co. 1897. $2.50, net.

Coincident with the portrait of Dr. Black, which we publish in this issue, we are very glad that the publishers of Dr. Black's valuable work on the anatomy of the teeth have given us a timely opportunity to repeat, and to emphasize the special value of this treatise to every student and practitioner. The author does not write from any *cacoethes scribendi*, but from the depths of his experience as a practitioner and a teacher. Most of us from our earliest career realized the barrenness of teaching in relation to the anatomy of the teeth, in the systematization of our terminology. It made it almost as difficult to convey as to comprehend, even clinically. If Dr. Black had done nothing else for us than to systematize our nomenclature, he would deserve our gratitude, but the reader of this work will appreciate it all the more when he knows that in the special departments, and to a large extent in the special methods of investigation, he has been distinguished for his extreme care and an utter absence of the melo-dramatic dogmatism which has made some of our "scientific authorities" a screaming farce. The changes in the present from the first edition are enough to make the former obsolete. The glossary is alone worth the money and ought to be strictly taught and adhered to. A small volume devoted exclusively in the same terse way to the entire nomenclature of dentistry would be a boon. We look upon this work as the basis and ground-work of all sound and scientific dental teaching. It is a work as necessary to the practitioner as to the student. It is in itself a post-graduate course of the greatest value.

Sajous's Annual and Analytical Cyclopædia of Practical Medicine. Philadelphia: The F. A. Davis Company, publishers. Cloth, $5.00; half Russia, $6.00.

For years there has been a constant and increasing chasm between the generally-accepted facts in medicine and surgery and that which is more or less subject to debate. There was once a happy time, years ago, when the average doctor learned his trade and practiced it in peace and quiet thereafter. But those days have gone, never to return. The Americans—perniciously active, according to our European friends, in their methods of turning to account any scientific discovery—have left no stones unturned in attempts to realize practical advantage from every discovery in medicine and surgery, no matter from what source it might originate. A great relief was afforded by *Sajous's Annual* in classifying the periodical literature, especially to those who have taken each consecutive issue; but there is nothing so good that it cannot be improved upon; and thus, after many years of careful consideration, the editor has worked out what is believed to be the solution of the whole problem. Dr. Sajous—whose experience, all will admit, has been sufficient to constitute him a person qualified to judge—believes it is absolutely feasible to combine the features of a text-book and of a work like *Sajous's Annual* in one system. His idea has been submitted to many eminent medical writers and has, in every instance, received their unqualified approval. Likewise a large number of busy, general practitioners, who not only feel the financial tax for medical works quite severely, but find that the possession of a large reference library only entails a corresponding amount of labor in using it, look upon Dr. Sajous's plan with particular favor. The new publication has the alphabetical arrangement, and comprises a concise statement of the generally accepted methods in vogue, in one style of type, while in a different type, on the same page, can be found the opinions of well-known authorities bearing upon whatever may be debatable regarding the subject in hand. This alphabetical arrangement will consider all the practical subjects of medicine and surgery and the clinical application of therapeutics. It will appear at the approximate rate of one volume each six months, the whole alphabet being thus covered in three years, and during this time a monthly supplement (*The Monthly Cyclopædia*), alphabetical from A to Z, will be brought out; so that a doctor can have a complete synopsis of the latest journal literature to reinforce his system of reference Subscriptions are taken for the entire series only, at $5.00 per volume, in cloth. This secures a large six-volume reference system with thirty-six monthly supplements during that period. The volumes will be beautifully illustrated, each volume will be handsomely bound in two colors of cloth. The half-

Russia binding will be furnished at $6.00 per volume, if desired. It will thus be seen that the aim of Dr. Sajous and his editorial staff is designed to accomplish two things: 1st. To give a satisfactory statement of what may be safely relied upon as the best general method of treatment in any given case. 2nd. To combine with this a means of practically utilizing the discussion by the leading medical authorities of the world, which may in any degree modify present establish methods.

Appleton's Popular Science Monthly for May, 1898. New York: D. Appleton & Co. 50c. a number; $5.00 a year.

The unique position which France holds in relation to "The Question of Wheat" is pointed out by Worthington C. Ford, chief of the Bureau of Statistics at Washington, in his second article, which heads the table of contents in *Appleton's Popular Science Monthly for May*. The "West Indian bridge between North and South America" is the title of an instructive geological study by J. W. Spencer, in which the probability is shown of such a land connection having existed between these continents in recent geological times. The article is given added value by a number of illustrations. "Witchcraft in Bavaria," by Prof. E. P. Evans, is full of interesting history, and among other things gives some rather startling information regarding the crude and ridiculous theological doctrines still taught in some of the German universities. The advances made in kite-flying during 1897, and the meteorological data obtained by the use of kites, are described by George J. Varney, in an illustrated article entitled "Kite-flying in 1897." "The Theory and Practice of the Income Tax" is the subject of Mr. Wells' eighteenth chapter. He takes the ground that it is impossible to enforce such a tax equitably. An extremely interesting and unique paper, entitled "A Study of Snow Crystals," is contributed by W. A. Bentley and G. H. Perkins. It gives an account of the various forms assumed by snow crystals, and shows that certain kinds of storms are almost invariably characterized by certain sorts of crystals. The most interesting feature of the article, however, is a series of photographs of the actual crystals, taken with the aid of a microscope. Prof. H. Carrington Bolton has an interesting study entitled "A Relic of Astrology." It gives the history of the naked figure of a man, surrounded by the signs of the zodiac, which has been the sign manual of the patent-medicine almanac from time immemorial. "A Study of Children's Ideals," by Estelle M. Darrah, will be found of interest and value by all persons having to do with the education of the young. "Man's Dependence on the Earth," by M. L. Gallouédec, is an interesting essay on the relations between man and his environment. A curious psychological study, entitled "Earliest Recollections," is contributed by Victor and Catherine Henri. The sketch is of Russell H. Chittenden, of the Sheffield Scientific School of Yale University, and is accompanied by an extremely good frontispiece portrait. Under the head of correspondence are two interesting communications; one entitled "A Fasting Frog," and the other giving an amusing account of the "Eating of the Heart of Louis XIV.," by Dean Buckland. "An Educational Heretic" and "Realization of a Prophecy of Mr. Spencer" are the titles in the Editor's table.

Cataphoresis, or Electric Medicamental Diffusion, as applied in Medicine, Surgery and Dentistry. By WM. JNO. MORTON, M.D., New York: American Technical Book Co., 45 Vesey St. 1898. 267 pages; 76 Illustrations. $5.00.

Enthusiasts in fads and facts are always intolerant to those who are not of their way of thinking, and when they happen to hit upon a fad and a fact of real value there are no epithets too damnatory to apply to those who were distrustful. Dr. Morton is an enthusiast of the first degree. This enthusiasm, however, is not based upon his own amazement at the immensity of his own brain, but upon deep and modest devotion and experimental research. If he is not fitted to give us an authoritative work on Cataphoresis Medication, we do not know who is. The contents are divided into the following chapters: I., Historical; II., Physics and Physiology; III., Apparatus and Outfit; IV., Applications in Medicine and General Surgery; V., Special application to Dental Surgery; VI., Application in Microscopical Work. To some readers the work will be of intense interest, to others of intense mystery. The question and technique in electrical action still remains to many busy men an unexplored region, and yet a fascinating one of most modern interest. At present the value of the cataphoresis is not fully accepted by conservative thinkers and practitioners. Yet it may happen, as it has frequently happened in science, that more ignorant men may stumble into the heaven of truth by virtue of their boldness. Failures, which have been many, and difficulties, which are always delightful stimuli, are no sound argument against the possibilities of this method; neither is occasional success sound argument for belief in its infallibility. Imperfect insulation of a county from the gum tissue; the use of the wrong electrode; too high a voltage on thin dentine over exposed pulps will have their victims; but it is too late to condemn cataphoresis on that account; yet it seems too soon to give it unstinted praise. The work is well worth the money. It will need, as it will merit, deep study We ask for it a good sale in Canada.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

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EDITORIAL NOTES.

The papers read at the meeting will appear in the June issue. A large amount of valuable matter is on hand for June and July.

Mr. J. COSTELL HOPKINS' Encyclopædia, the first volume of which has appeared in Toronto, will contain a history of dentistry in Canada.

THE following Ontario statistics are interesting: Dentists in practice in Ontario, March 4, 1868, 200; whole number of licenses granted, including these, 779. Of these: Known to be dead, 105; not now in practice in Ontario, having removed from the Province, 105; retired, 14; now in practice in Ontario, 555; increase in thirty years, 355; average annual increase, $11\frac{5}{6}$; D.D.S.'s, 320; M.D.S.'s, 14; M.D.'s, 12.

AT the first meeting of the Ontario dentists called by Dr. B. W. Day, and held in the St. Lawrence Hall, Toronto, January 21st, 1868, the following were present: Drs. B. W. Day, President; J. Stewart Scott, Recording Secretary; J. O'Donnell, Corresponding Secretary; W. C. Adams, Toronto; J. Bowes, Ingersoll; D. A. Bogart, Hamilton; C. S. Chittendon, Hamilton; S. B. Chandler, Newcastle; W. H. Card, Whitby; F. G. Callendar, Cobourg; T. I. Jones, Brockville; Chas. Kahn, Stratford; A. D. Labonde, Brockville; L. Lemon, St. Catharines; D. Pentland, Peterboro'; Robert Reid, Galt; M. E. Snider, Toronto; R. Trotter, Brampton; H. T. Wood, Picton. Incipient members: T. Neelands, Port Hope; L. VanCamp, Berlin. Visitors: B. T. Whitney, Buffalo, N.Y.; A. M. Rosebrugh, M.D., as delegate from the Medical Alumni Association of Victoria University; Dr. Dewar, member of the Medical Council of Ontario; Dr. G. W. Boulter, M.P.P. Honorary members: Prof. C. V. Berryman, M.A., M.D., member of the Medical Council of Ontario; and others, including a large number of applicants for membership.

Burchard's Dental Pathology, Therapeutics and Pharmacology.—The first two volumes of *The American Text-Books of Dentistry*, namely, the *Prosthetic*, edited by Prof. Essig, and the *Operative*, edited by Prof. Kirk, have created so favorable an impression that the third of the series, shortly to be published, will be awaited with expectancy. Dr. Burchard happily combines rare powers of scientific insight, practical application and clear exposition. He is one of the most fertile contributors to dental literature, and his pen, enriching anything it touches, has powerfully aided to give his profession the advancement it is achieving as one of the most highly developed of the medical sciences. The basic foundation of dentistry on the identical principles which underlie modern medicine and surgery is, in fact, the keynote of Dr. Burchard's book. It inculcates throughout a sound and rational pathology, and builds thereon a clear and successful system of practical dental medicine in the broadest sense. The grouping of subjects is equally original and fortunate. Not only are they naturally germane, but, moreover, each tends to aid the comprehension of the others. Furthermore it will be observed that the three volumes of this series will cover the most important parts of dentistry, both from the standpoint of the practitioner and that of the student. The previous volumes have been promptly adopted as official text-books, and equal recognition is virtually assured for Dr. Burchard's book. It will be handsomely illustrated and priced at $5.00, net. The publishers are Messrs. Lea Brothers & Co., of Philadelphia, who gave the profession the epoch-making *American System of Dentistry*, of which, by the way, a new volume is in preparation.

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Vol. X. TORONTO, JUNE, 1898. No. 6.

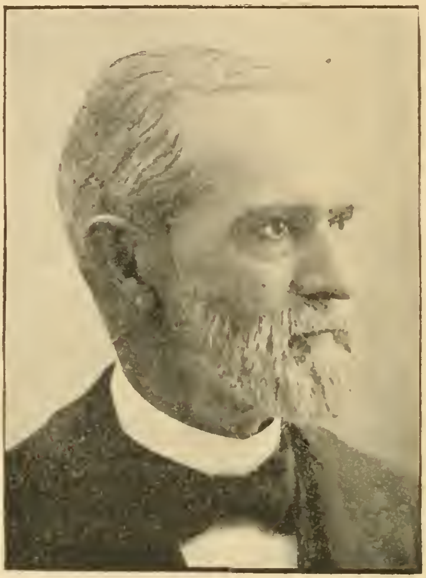
Original Communications.

DR. S. B. PALMER, SYRACUSE, N.Y.

The DOMINION DENTAL JOURNAL has several times been under obligations to Dr. S. B. Palmer, of Syracuse, N.Y., for valuable communications, one of which appears in this issue. We happened to be in possession of an excellent photograph of the doctor, and familiar with some parts of his career, and it occurred to us, that coincident with the space given to our friends in Vermont it would be a happy thought to include the portrait of one of the eminent pioneers in the heart of New York State.

Dr. Palmer was born in 1822. In 1847 he worked on the farm where he was born, about three miles from the nearest village, where he availed himself of the common school advantages, and afterwards entered the academy. The circumstances which led him to choose dentistry as a profession were unique and suggestive of his character. He needed artificial teeth, he had never seen a dentist, excepting the itinerant, whose chief business was extracting. Knowing a neighbor who wore a silver plate he examined it and went to Syracuse, where in a druggist's a dental depot was kept, and inquired for some works on dentistry. The only one he found was "Goddard on the Human Teeth," published in 1844, but the price, five dollars, deterred him from immediate purchase. After awhile he had saved the money, bought the book—which he still retains as a valuable memento—and started to study it, with the single object of making a plate for himself. Following the illustrated instructions for the manufacture of a narrow metal plate with lasps, he reduced a silver half-dollar to the right gauge on an anvil. With the aid of the drug-clerk he selected the necessary plain teeth, and in about seven months afterwards, after various vicissitudes, he had the set of nine teeth fitted and finished by himself, quite equal to anything of the kind that could be made to-day.

Referring to his article elsewhere in this issue, our readers will read with interest the outcome of this original expedition in the amateur field of practice. The success of his own plate induced him to try his prentice hand for some of his friends. He then constructed the necessary operating instruments, after the illustrated forms in "Goddard," and began filling teeth for his own family, before he had any thought of studying dentistry. After his first seven months of self-reliant and independent study, everything seemed easy. He entered an office, after the fashion of the times, in 1848, and was at once set to work. In 1849 he graduated, according to the custom, with a certificate of recommendation. There was then no law or license. The "School of Practice" consisted of the office and laboratory work, while dental periodicals were his chief text-book—the *American Journal of Dental Science*, the *Dental Register* of the West, the *Dental News Letter* and the *Dental Cosmos.* He attended "lectures" as follows: The American Dental Convention, which made him well acquainted with the leading dentists of the country; the late American



DR. S. B. PALMER,
SYRACUSE, N.Y.

Dental Association with a transfer; the Dental Society of the State of New York; the Fifth District Dental Society; the New York Odontological Society, etc. To dental periodicals, to dental societies, and to his own persistent application he owes the stimulus he received to original thought. In 1869 he reeived his Diploma Degree of M.D.S., Master of Dental Surgery, from the Dental Society of the State of New York. The doctor is one of the leading types of a class of indomitable men in our ranks who "broke the force of circumstance," and accomplished for himself more than any college curriculum could have done for him. He was honored in the profession by his colleagues by appointment on the State Board of Censors, which office he held for twenty-three years, until the change in the State law; was transferred to the State Board of Dental Examiners, representing New York State Dental Society under the Regents of the University of the State of New York, which appointment he still occupies. We shall let him speak for himself on another page, but his career is an object lesson of pluck and perseverance which no living student can ever again fully imitate.

GINGIVITIS AND ITS RELATION TO CROWN WORK.

By S. B. PALMER, M.D.S., Syracuse, N.Y.

Some months ago the *Ohio Dental Journal* contained an article under the above heading, which was credited to H. J. Goslee, *Dental Review*.

I have selected this subject for the DOMINION DENTAL JOURNAL for two reasons. 1st. The article sets forth the most concise observations, conditions and facts relating to gingivitis that have come to my notice. I quote another's statement rather than give conditions and effects from my own knowledge.

The principles involved in gingivitis are in the line of study (oral electricity) which I have persued for thirty years. With few exceptions authority seems to class the outcome as a theory, without a scientific foundation. This, however, does not annoy; in fact, sufficient of the so-called theory has been incorporated in practice to give assurance that the profession has not been degraded by departure from established belief.

2nd. The DOMINION DENTAL JOURNAL has been selected as a compromise between what is said of English and American dentistry. The former is said to be most scientific, the latter most practical.

Canada is considered to be somewhat "English, you know," and being nearly allied to the States, would naturally represent scientific practice. Earnestly I kindly invite scientific discussion upon the cause of gingivitis, which is the combination to unlock the so-called "electro-chemical theory." Either from lack of understanding the principles involved or prejudice against the theory, the subject has not been scientifically discussed upon the plane where the phenomena appears. One might as well expect to raise stock on mineral food, as to attempt to discover the true cause of gingivitis upon the physical plane or by physical experiments. Each dimension is under control of natural laws, adapted to the condition of the matter so controlled. With each evolution of matter the laws are adapted to and control the organized matter. The same force is an agent for all changes and evolution of matter from atoms to intellect. That force, with its interconvertable phases, is electricity, heat, light, magnetism and chemical affinity. By combination of these agents in creation matter united land, water, atmosphere and the globe was the outcome.

From a plane above came "the breath of life." Vegetable and animal life appeared on land and in water, and through evolution the highest creation—man. In the human species are found a concentration of all the laws and principles which are required for propagation and support of man. The difficulty in understanding the writer's belief is the failure to trace the laws so well known and taught in physics, and to some extent upon the vegetable plane in organic chemistry up and into the animal plane.

I boldly make the statement that the above-mentioned forces are one and the same from minerals to mind. I will not go into due metaphysics, nor go beyond the point under discussion, but place myself on record by giving my convictions that some one in the no distant future will shock the school of physiology as severely as the new departure did dentistry twenty-one years ago.

An observer of nature and natural laws will recollect that the energies and forces mentioned have recorded the works of the Creator upon each plane according to the preparation and possibilities of matter to receive them. The mineral dimensions shows beauty and form in crystals and flowers in frost work upon the window pane. The vegetable plane evidences life and instinct in plants and trees. Roots penetrate the soil for stability and for moisture, reach out laterally toward a near-by stream, and in thicket strive to tower above their neighbor for sun light.

The animal kingdom embraces the highest creation, man, in whom is embodied all the required laws, principles and instincts found upon the planes below, with reason, will and intellect added.

The important point I wish to be remembered is this; in all the evolutions of matter up to man the laws and forces have also evolved, and act upon organic matter in the vegetable and animal kingdom, upon the same principle that physical forces do on the mineral plane. That is, electricity, so to speak, is also organized or endowed with life, or become, as sometimes denominated, "animal current."

Animal magnetism is not a new term, nor does it need evidences of its existence. Animal heat is also a fixed fact, and is one of the best proofs of organization to meet the conditions. Animal heat ranges between freezing 32° and 100.3-4° above when the organized dynamo burns out and vital energy ceases.

Before making an application of these organized forces please bear in mind that electricity and heat are close friends helping each other in most of the work done by those forces. The effect of this union upon gum tissue is this: Gold in the mouth will not injure gum tissue by the temperature, conducted by hot drinks or food as all know who wear or have worn gold plates; but where gold is insulated from the membrane, except at a given point or points, there is added to heat a current of electricity which, with the heat, is discharged into the gums, etc.

Mention will be made of this fact farther on. Now let us introduce quotations from the article already mentioned.

"It is certainly a lamentable fact to note the surprisingly small percentage of roots carrying crowns that are devoid of any evidence of periosteal inflammation, or that are surrounded by tissue presenting a normal or healthy appearance as compared with the very great percentage that invariably manifest more or less marked degrees of gingivitis."

On the face of the great amount of literature that has been given us upon this subject, and in view of the rapid strides of progress and advancement achieved in this line, it seems indeed a deplorable condition when one can conscientiously and candidly assert that only from 15 to 25 per cent. would be a fair estimate of these roots, which, after carrying crowns for a time, present no indications of this condition, and yet we are convinced by close observation that on an average such is the case. The question naturally arises then as to its probable cause.

Since a very great percentage of the crowns now in use are made of gold, or having gold bands, would it be just to attribute it to the assertion sometimes made that the tissues of the mouth take unkindly to that metal, when we will, perhaps, turn right around and advocate a gold plate to the next patient presenting themselves; when we know as an absolute certainty, vouchsafed to by proof and experience, that there is no substance, either metallic or mineral, that when brought into contact with the tissues of the mouth presents so many favorable points as gold. Yet, for all that, in crown work we can but acknowledge the frequent presence of an unfavorable condition, but does it not seem very plausible that the fault lies not in the metal, but in its unnatural relation to the root and tissue by virtue of poor adaptation? Please bear this in mind, it will be answered farther on.

"It is an acknowleged fact that the tissues take very kindly to porcelain, and that a much greater proportion of crowns made of that material are worn with comfort and without the presence of inflammation and subsequent secession than are those made of gold; but it looks probable, and in fact seems evident to me, that that difference is due in main to the fact that a porcelain crown, when adapted and in position, presents always this favorable condition, a perfectly smooth vitrified, highly-polished surface, with a rounding edge. And as this is the most desirable and natural condition why then would not the tissues take kindly to it and remain normal and healthy? When, unless there is irritation from an improperly prepared root, a poor fitted band, or impingment upon the membranes caused by driving the band on too far there is absolutely nothing to prevent. We are impelled to maintain, without hesitancy, that this can be accomplished, and the same results secured in the use of a gold crown if we will but take the time, pains and precaution to properly prepare our roots," etc. The remainder of the article describes how it may be done.

In all my reading I have not had such an opportunity to explain the cause of crown work disturbances, as the above affords. The differences between gold plates and gold crown, between porcelain and gold banded crowns, the incompatibility of gold as a filling material for specific conditions of teeth, may all be answered under one head: The effect of gold crown upon gum tissue.

Early prejudices against the electro-chemical theory seems to have excluded it from our dental chemistry, and, with few exceptions, from being taught in dental colleges. As this journal reaches many readers who may not know the source from which the basal principles of our knowledge has been obtained we will repeat in substance what has several times been given in previous papers. In boyhood days fondness for the study of electrochemistry by private study afforded considerable information.

In 1847 I commenced the study of dentistry, at the same time the wearing of a silver plate. Rubber was not then introduced, With that I commenced the study of oral electricity.

During fifty years a number of plates of various materials have been worn, each giving experience that could not have been gained by any other means. This information is of no account except as it may benefit some young practitioner by knowing points regarding metals worn in the mouth which are not recorded. I will briefly mention the peculiarites of each in turn. In early times silver was used for temporary work, also when gold could not be afforded.

Silver in the mouth is a positive element, corresponding to the zinc element in a galvanic cell, consequently any food containing carbon, as toast, broiled meats, roasted pea-nuts, coffee etc., produced an unpleasant metallic taste, sulphur in eggs, breathing smoke from gunpowder, or even passing a sulphur spring, in breathing through the mouth the taste would detect sulphur. Still another feature, gold clasps were often used on silver plates, destruction of the teeth soon followed. The clasps, being negative, became the positive pole from which the current went out to decompose the impacted food, and thus furnish acid to dissolve the enamel. A gold plate, with an alleged silver clasp, would be an improvement, or a silver plate with an alloy of silver and copper clasps would have been a great improvement. The silver plate was discarded for gold, which was a relief from the taste of a metal. With gold the current was reversed, the plate was negative, and not acted upon by food like carbon, sulphur, etc.

It was a galvanometer, however, to detect base metals or metalic compounds. Silver, iron, tin, lead, or liquids such as we often use in canned fruits, made it known. Thus the study became exceedingly interesting. Rubber came and was put to the test, and the result may surprise those who have not made the change. It is true patients could not describe if they could realize what an expert could detect. Rubber was an insulator, and here let me caution any young dentist against arguing that rubber plates do not injure taste. It may be true that the plate does not cover membranes of taste like the tongue, but the roof of the mouth has its office to perform on this line. Insulation was most objectionable, and that means more than can be imagined.

Thermal changes during eating are of importance and natural. The portion covered by a rubber plate might as well be paralyzed as to be so covered. The smooth surface of a plate of any material is unnatural, but when no changes, electrical or caloric are felt, taste is impaired, besides the abnormal condition of the surface covered, which I have not been able to correct by black rubber.

Please understand that I am not advocating disuse of rubber. If I was working at prosthetic dentistry I would use rubber according to circumstances. It does no material injury, but is annoying, as above stated, and I am giving the facts relative to each material.

Swaged aluminum plate, teeth mounted with rubber, was the next on trial, and at once overcame all objections. To say nothing of its light weight, the metal seldom produces electro-chemical action by anything taken into the mouth. It occupies a neutral position, as compared with gold or silver. The latter is a positive element, and gives a metallic taste, as before stated, by carbon, sulphur, etc., while gold is a negative factor, and consequently it becomes a receiver of the electricity which is generated during mastication, and mingling of the positive and negative elements of food. Electricity is thus generated, as it would be in mixing elements in the laboratory. Without a metal in the mouth the electricity is what might be called organic, not polarized. It is the agent which adds delicacy to taste, also that which prompts natural selection of food to be eaten in pairs, as sweet and sour, in lemonade, acid and alkali, soda water, charged waters, roasted or broiled meats, roasted coffee, peanuts, etc., are negatives to saliva, and cause a natural current of animal electricity. This prepared food is taken into the stomach and the mysterious process of digestion completed, neutralization of the elements, the waste product is cast off, the electric vital energy is stored up in the muscles for work. Excuse this digression from the oral cavity. The truth of this will some day revolutionize physiology and establish digestion upon an electrical basis.

Now we are ready to advance another declaration. That metal in the mouth converts organized electricity into physical electricity. The effect is this, when such an unnatural current is discharged at a given point tissue or dentine is injured. Aluminum is almost free from potential, thermal changes and electricity passes readily through the plate without injury, so with gold when it rests upon membrane. This will be taken up again.

The next trial plate was of cast aluminum for experimental purposes. In order to cast aluminum it is slightly alloyed, and my first experience in wearing the plate was interesting and amusing. The plate was a full upper, except the second molar on each side. To increase the bite, and to prevent the molars from elongating a cap of the metal covered the coronal surface. The case articulated with a bridge on each side below. The plate was inserted in the afternoon, nothing remarkable was noticed except the metallic taste thought to be due to finish, etc. In the evening I went upon the street, and to my surprise all the street lights in sight flashed, and were unsteady. As all were affected alike I concluded the cause was at the Central Station. It was not many minutes before I could produce the flickering at will by closing my teeth. On opening the jaws enough to give space the lights were steady. By involuntary action the electric shock affected the optic nerve and produced the effect. The gold became charged, and on contact discharged and gave a shock. Burring out the metal and filling in with vulcanite corrected the trouble. But the cast metal was discarded for a rolled and swaged plate, which, to me or for me, is the most comfortable plate I have worn, and, in fact, it has very few objections.

To be fair with the cast metal I will say for a single plate, where there would be no gold opposite, I presume the alloy would not be objectionable. In my own case, with a large surface of crowns below, and the tongue connecting the two metals, a metalic taste was ever present.

Now let us return to the subject of gingivitis. The cause of gold crown disturbances has been well defined in the effects of gold upon tissue we will recapitulate. Gold in the mouth becomes charged with electricity when the metal rests upon gum tissue; like a plate no harm is done when only small portions rests upon the gums or under the gums that portion receives the amount of heat and electricity that is received upon the whole surface. I know from experience that hot water alone produces severe pain on the sensitive dentine below the gum line. That coffee increases the current from the effects of the carbon in the coffee acting upon the saliva. I find that bridges are worse than single crowns, having more gold surface to gather the electricity. Bear in mind that in physics intense heat can be produced by electricity. In animal life the range is between freezing, and 100.3—4° above. Cataphoresis teaches that intense currents destroy gum tissue; feeble currents, for a long period, produce like effects on organized bodies. It is a natural law that gold terminating in a band under the gum causes an abnormal condition as seen in connection with crown work. Perfection in fitting cannot set this law aside. As a remedy for sensitiveness of dentine silver nitrite is the most effectual I have used. Shortening the band, so as not to extend beneath the gum, is usually a remedy for inflammation.

With the above explanation, aided by evolution in practice, with a better general understanding of oral electricity, I will try to make plain why gold fillings are not compatible with dentin in teeth of children, or in deep-seated cavities where the tissue is a conductor, without an insulating lining. As above stated, gold worn in the mouth becomes the positive plate or pole of a battery. During mastication or mingling of positive and negative elements with saliva, gold crowns are highly charged and the current passes into the gum tissue when the band extends under the gums. That is, the gold in contact becomes an electrode. To carry out the correspondence, every gold filling at a point nearest the pulp, or any part of the walls of the cavity which may be the best conductor, is an electrode. Where the dentin is normal, or when the dentin has been protected so as to insulate the current, no harm follows. Where the current continues, dissolution of the lime salt is the result, though it may be years in doing its work. To relieve pulp irritation caused from thermal changes, I have removed large gold filling which was done by different operators, and had given no trouble, nor did they show indication of leakage, and found the dentin covering the pulp decalcified a nice organic conductor. The same principle is active when children's teeth are filled before becoming dense enough to insulate the thermal changes ; in this case all of the cavity walls are softened. This doctrine has been taught for a score of years or more and has had but feeble support, having been declared by the highest recognized leaders in the profession that the so-called " electro chemical theory has no scientific foundation." In charity I forgive them, " for they know not what they do." I earnestly invite scientific discussion upon the laws set forth. I fully understand why a professor in physics should oppose the idea of evolution in physical laws. It is difficult to conceive why a dentist who has a knowledge of electro-chemistry cannot see that the same laws act and react upon organized matter, since he is permitted to work in a vital laboratory where the evolution is demonstrated and one is permitted to come in touch with nature and witness the evolution of matter to become organic, and, not less, the evolution of laws and forces to correspond with the material changes. My observations and personal experiences on this plane are backed by nature, and here I have the courage of my convictions to stand against the world's opposition from the plane below.

INSTRUMENT NOMENCLATURE WITH REFERENCE TO INSTRUMENTATION.

(Continued from March Issue.)

By G. V. Black, M.D., D.D.S., Sc.D., Chicago, Ill.

Second Part.—Formula Names.

The names which have thus far been developed are sufficient for the designation and easy recognition of instruments belonging to any order, sub-order, class or sub-class. They are not sufficient, however, for the recognition of the individual instruments of any one of these divisions of forms. The blade of a hatchet or hoe excavator may have an angle with its shaft varying from a slight inclination to a quarter of a circle, or even more. Any angle of blade between these may be effective for some particular operation. A similar variation occurs in the widths and in the lengths of blades. An examination of the excavators on sale in our dental depots shows that the widths of blades vary from two-tenths to fifteen-tenths millimeters. The lengths of blades vary from two to about ten millimeters. Any width or length between those mentioned may be effective in some particular operation.

Now any of the widths may be combined with a great diversity of lengths and these again may be combined with a great diversity of angles. We readily see that in this way we arrive at a vast multitude of slight variations in these instrument forms, any attempt to specify individual instruments without some rules for limiting the number becomes hopeless.

I took up this matter as a subject of study a number of years ago, with the thought that these instrument forms, or a sufficient number of them, could be specified by formulæ, as is done generally with mechanics' tools ; as the quarter-inch auger, half-inch chisel, etc. In this study I was at first led into a very complicated system of measurements, which I consider too complex to introduce into school work. But the need of some available system has been so constantly apparent that the subject has not been allowed to rest. Work has been renewed at intervals with each new thought obtained ; and finally the idea of a strict limitation of instrument forms in breadths, lenghs, and angles of blades has been arrived at. The carpenter will not buy an auger or a chisel that has not been made to a definite formula—a definite measurement. This is true of mechanics' tools generally. They are all made to specified formulæ. It may be said that the mechanic's drills are made to definite formulæ in order that he may fit bolts made to similar definite formulæ, and that the dentist does not do this. True, but the mechanic also uses these formulæ in naming both his drills and his bolts that he may know them. Why should not the dentist have his instruments made to definite formulæ in order that he may know them, and designate the one fitted for a special act in excavating? Why should he have an infinite variety of forms without definiteness? No one dentist uses such a variety. Why should we not agree upon definite angles of the blades of hatchet and hoe excavators, and combine with these angles definite sizes, or widths and lengths of blade? In this way we may gain a sufficient number of forms of cutting instruments and rule out all others. And then the thought has also come to me of arranging these in definite sets in which the formula names shall run on definite gradations for all of the instruments of each set, and in this way so construct them that they will be easily learned and remembered by students.

A strict study of the subject from this standpoint develops the fact that we do not need more than three, or at most four angles. Now with each of these three or four angles we will combine one long blade of definite width, one medium length of definite width, and one short blade of definite width, stipulating that the lengths and widths shall be the same in each angle. This makes a set of hatchets—if three angles be used—of nine instruments, and a set of hoes of nine instruments, or eighteen instruments in all. These we may name the set of ordinaries. (See list of formalæ No. 4.)

With this limitation of widths and lengths and angles of blades, and the regular order in which they occur, the difficulty of learning to know them by formulæ is reduced to a minimum. Indeed it is found in actual practice that the forms are known by sight as quickly as this simple list of formulæ is learned.

I have chosen and had made some sets of instruments upon this idea, and find from actual use that three angles is quite enough for my personal use. It is necessary only to add a list of spoons, enamel instruments, and a few long blades for reaching into deep cavities, to make the set complete. A list of special forms for special uses, the formulæ for which are constructed upon a similar plan.

It will be seen now, I think, that the infinite variety of widths, lengths and angles of blades without definiteness or restriction of any kind, except the fancy of those ordering instruments, is responsible for the chaotic condition of the forms of cutting instruments. It is my belief that for school work a strict limitation of instrument forms to those that may be accurately designated is desirable.

SELECTION OF SYSTEM OF MEASUREMENT.

If we have decided that a system of formulæ based upon measurements of widths, lengths and angles of blades is desirable, the next point will be to agree upon the particular system of measurement to be adopted.

For the measurements of widths and lengths we have the English inch and the French millimeter. Of these I should choose the French system for two reasons. *First*, from the present indications it seems that it will in time become the only system employed in scientific work. *Second*, the length of the unit seems much more convenient for the work; particularly is this the case if we use the tenth of the millimeter for all measurements of breadths and the millimeter for all measurements of lengths of blades. This seems to be so evident that I have adopted this, pending discussion.

The adoption of a system of graduation of the circle for the measurement of angles is a graver problem. The astronomical circle with its graduations of 360 degrees is far in excess of our needs and becomes cumbersome, because of the minuteness of its sub-divisions. On the other hand, it is the division of the circle most used and best known. The mariner's compass with its division of the circle into 32 points seems insufficient. The division of the circle into 100, the centigrade circle, seems very much better suited to our needs. In this 25 centigrades is a quarter of a circle, and equal to 90 degrees of the astronomical circle. The quarter circle is about all that we use, and the graduations of this are much more quickly caught and appreciated than in the large number of divisions. I shall use this pending further discussion.

THE GAUGE.

With the view of making the preparation for this work as nearly perfect as possible, I have had a gauge made in steel for instrument measurement. It consists of a circular head graduated in hundredths, and an attached bar ruled in parallel lines for the measurement of angles. The bar is also graduated in millimeters for the measurement of lengths. For the measurement of widths a supplemetal bar extends beside the main bar, leaving between the two bars a gradual widening or V-shaped space, which is graduated in tenth-millimeter widths up to fifty-tenths or five millimeters. This is found very convenient for the measurement of widths of blades, the sizes of plugger points, and the diameter of burs.

FORMATION OF FORMULA NAMES.

For the formation of formula names of excavators, three points are considered, viz., the width of the blade, the length of the blade, and the angle of the blade with the shaft. All other points are left to be guided by the rules that have been given in Part First. These (width, length and angle of blade) are very exactly the points that go to make up the individuality of the several instruments of any order, sub-order, class or sub-class, and will certainly identify each. The particular conformation of the shanks and handles are left to the individual manufacturer, or to the taste of the person ordering instruments. Neither is it considered important to this system that the angles be made sharp and definite, or that they be made in the form of moderately short curves. All such points in construction can be left to the taste of the manufacturer. At least the system now proposed does not take them into consideration.

THE MEASUREMENT OF INSTRUMENTS.

In the measurement of instruments for the formation of formula names, first try the width of the blade in the V-shaped slot of the gauge, which will give the width in tenth-millimeters, and set this down as the first figure of the formula. In this the tenth-millimeter is to be used as the unit. Next measure the length of the blade from the centre of the angle to the cutting edge in millimeters and set that down as the second figure of the formula. In this the millimeter is used as a unit. Third, find the angle of the blade with the shaft and set that down as the third figure of the formula. In making this last measurement, lay the handle of the instrument on the main shaft of the gauge, parallel with the parallel lines, and with the point turned towards the small number of the circular head. Now move the instrument until the angle of the blade coincides with one of the lines graduating the circle, being careful to keep the handle parallel with the parallel lines.

If we have measured a hatchet and the numbers give—width, 12; length, 5; angle, 6, the formula name will read "Hatchet, 12-5-6." If it be a hoe, the formula will be the same and we call the instrument "Hoe, 12-5-6," the class name always preceding the formula name. This distinguishes both the kind of instrument and the size and angle of the blade of each. In this way we name each instrument of the set, no matter what its class and size, as "Spoon, 29-6-12," or "Spoon, 15-8-12," or "Enamel Hatchet, 15-8-12," or "Enamel Hatchet, 10-6-12," etc.

It is also understood that the edge of cutting instruments shall be at right angles with the length of the blade, unless otherwise specified. When some other angle is desired it is measured in the large numbers in the last quarter of the graduated circle by moving the instrument without turning it over, and still keeping the handle parallel with the parallel lines of the gauge until the angle of the edge coincides with one of the centigrade lines, and that number is set in brackets following the width number, thus Gingival Margin Trimmer 20 [95]-9-12 or Gingival Margen Trimmer 20[80]-9-12.

FORMING INSTRUMENT LISTS.

We have now made out rules of nomenclature by which we may accurately designate individual instruments. I will now explain the scheme for grouping instruments in formula lists which serve to limit the number of forms and to bring those chosen into intelligible order. The appreciation of the value of regular order in the formation of instrument sets has been arrived at rather slowly, and largely from studying the difficulties of students in learning the forms of their instrument points. With the methods that have prevailed few persons learn to think in their instrument forms. They have to search for the proper instrument instead of reading it in the case before them. It is that we may be able to teach pupils to think in their instrument forms that we strive to construct graded sets in formula nomenclature; and these should be placed on such lines of gradation, or be so grouped, that the mind easily follows from one to another throughout the set.

It is not difficult to do this with any of the forms of excavators, but some of them are more easily arranged than others. The ordinary hatchets and hoes present the greatest variations of size and angle of blades, but fortunately are the most easily graded into sets. Carpenters' augers are made in gradations of sizes of 1-32nd inch, making the most perfect set. Another set is made on gradations of 1-16th inch, this set containing but half the number of the first. Still another set is made on gradations of one-eighth inch, containing but one-fourth the original number. Yet each of these sets is complete upon its individual lines, and each of the smaller sets is contained in the larger.

For the ordinary hatchet and hoe excavators we may readily do a similar thing by first constructing a list of formulæ on regular gradations that will cover the useful sizes and angles of blades, and then cut out all of certain dimensions or angles in the formation of shorter lists. This is not so readily done in spoons, enamel hatchets and some other forms, for the reason that in these we do not require so many instruments of a given class. These also require different formula names, for the reason that the blades are of different dimensions from those of the hatchets and hoes. They must, therefore, be placed in a different formula list in which we can group together such instruments as agree in dimensions of blade. If necessary we may make several formula lists. At present I will propose three divisions, naming each, as follows:

Ordinaries are the common forms of hatchets and hoes, many of which are found in every operating case.

Specials are those instruments designed for special acts in excavating, such as spoons, enamel hatchets, chisels, etc.

Side Instruments.—These are selections for some particular purpose, only one or two of which are wanted in the instrument set, and which it is not desirable to include in a regular formula list.

ORDINARIES.

After a long and careful study of the dimensions, proportions and angles of blades of the hoe and hatchet excavators used by dentists and generally on sale in dental depots, I am of the opinion that nearly or quite every dentist will find in the following formula list about everything he will want:

SET OF ORDINARIES NO. 1.

14-6-6, 12, 18 and 23.
12-5
10-4
8-3
6-2
4-1
forty-eight instruments.

Formula lists for ordinaries will be given in this form. The first figure gives the width of blade; the second the length of blade; the third the angle of the blade with the shaft; and the additional angles used are given in the first line only, divided by commas.

Each of the dimensions of blade is to be made in each of the angles given both in hatchets and hoes. The list is to be read: Hatchet 14 6-6, hatchet 14-6-12, hatchet 14-6-18, hatchet 14-6-23; or hoe 14-6-6, etc., for the first line; and hatchet 12-5-6, hatchet 12-5-12, hatchet 12-5-18, hatchet 12-5-23; or hoe 12-5-6, etc., for the second line. This is continued in the same way for each of the dimensions of blade. *The formula of each instrument is stamped upon its handle as a convenience to the student in learning his instrument points.*

According to the rules for contra-angling given in Part First, page 81, hatchet and hoe 14-6-12 would be binangle contra angles.
Also hatchets and hoes 14-6—18 and 23
12-5
10-4 would be triple angle contra angles.

There are in the set twenty-four hatchets and twenty-four hoes, or forty-eight in all, and if generally adopted as the full list of ordinaries would, I think, be found satisfactory.

In making shorter lists I would cut out all of certain dimensions of blade, or of certain angles, preserving the regular order of formula names for those retained. As the least desirable I would first remove all of dimensions 14-6 and 4-1, thus:

Set of Ordinaries No. 2.

12-5-6, 12, 18 and 23.
10-4
8-3
6-2
thirty-two instruments.

This set is a most beautiful gradation of the ordinary forms of excavators, and really embraces about all that any dentist would want in his case. But these are probably a greater number than most persons would desire.

For the next set I would remove all of the dimensions 10-4, thus:

Set of Ordinaries No. 3.

12-5-6, 12, 18 and 23.
8-3
6-2
twenty-four instruments.

This is also a very effective instrument set, but if there are still too many I should remove all of the angle 18 centigrades, thus:

Set of Ordinaries No. 4.

12-5-6, 12 and 23.
8-3
6-2
eighteen instruments.

This I regard as an especially desirable list for school work. It is the list I have used most except that I have used the dimensions 5-2 instead of 6-2, but in the future will use the 6-2.

Now, for a still shorter list, and the shortest that I could recommend as reasonably efficient, I would retain but two dimensions:

SET OF ORDINARIES NO. 5.

10-4-6, 12 and 23.
6-2
twelve instruments.

This is a list of six hatchets and six hoes excellently graded to the requirements of the student—indeed I do not know how we could better select this number of instruments.

In the instrument sets given we have five differing widely in numbers, but in each the formulæ are complete on the lines laid out and every instrument is a good one. The smaller sets are all contained in the largest, and are so arranged as to give manufacturers the least trouble in supplying classes. If manufacturers will make up List No. 1, or even List No. 2, and make these their stock instruments in ordinaries, there are few wants in this line that will not be supplied by them. From them any school that may desire to introduce the formula plan of nomenclature in teaching will be able to choose a satisfactory list. Within a few years this may become the plan of the dental profession, and the manufacturers will be relieved from the loads of dead instrument stock they are now compelled to carry. That other instruments in this line will be demanded goes without saying, but they will be fewer in number as discussion of plans and methods under conditions of greater accuracy of understanding proceeds.

SPECIALS.

In the list of specials I will give such only as I have defined in Part First. These seem to me from my personal study and use of cutting instruments to be best suited to our present methods of preparing cavities. I will first give what I regard as a complete list, and afterwards cut it down to smaller numbers, removing such instruments as can be spared with the least detriment to effective school work. It is to be understood that each full instrument set is to contain a list of ordinaries and a list of specials. The list of specials will contain numbers of classes instead of a great variety of sizes and angles of two classes, as is the case with the ordinaries. We do not require many sizes and angles of blade in any one class of specials. After a careful study of them it is found that most of them may be arranged upon practically the same formula numbers.

There are a few, as the straight chisels and the cleoids, which will not require the full formula terms to sufficiently designate them. Three widths of blade seem to me to be the most that will be necessary, and nearly all may be of the angle 12 centigrades, a few only requiring the angle 6 centigrades. The length of blade may be on the same lines in all but the discoids, the length and breadth of which are necessarily the same.

LIST OF SPECIALS NO. I.

Enamel hatchets..........	20-9-12 Pr. R. & L. bevels.
Enamel hatchets..........	15-8-12 Pr. R. & L. bevels.
Enamel hatchets..........	10-6-12 Pr. R. & L. bevels.
Spoons.................	20-9-12 Pr. R. & L. curved.
Spoons.................	15-8-12 Pr. R. & L. curved.
Spoons.................	10-6-12 Pr. R. & L. curved.
Spoons.................	20-9-6 Pr. R. & L. curved.
Spoons.................	15-8-6 Pr. R. & L. curved.
Spoons.................	10-6-6 Pr. R. & L. curved.
Gingival margin trimmers..	20 (95)-9-12 Pr. R. & L. curved.
Gingival margin trimmers..	20 (80)-9-12 Pr. R. & L. curved.
Gingival margin trimmers..	15 (95)-8-12 Pr. R. & L. curved.
Gingival margin trimmers..	15 (80)-8-12 Pr. R. & L. curved.
Binangle chisel	20-9-6. One instrument.
Binangle chisel	15-8-6. One instrument.
Binangle chisel	10-6-6. One instrument.
Straight chisel...........	20. One instrument.
Straight chisel...........	15. One instrument.
Straight chisel...........	10. One instrument.
Discoid..................	20-2-12.
Discoid..................	15-1½-12.
Discoid..................	10-1-12.
Cleoid...................	20.
Cleoid...................	15.
Cleoid...................	10—thirty-eight instruments.

This gives a list of thirty-eight special instruments. Several other forms might be added, but to me they seem unnecessary. They can be added, however, upon the same plan of formulæ used in this list, or if necessary still another formula list may be arranged. This list will give rise to more difference of opinion than the list of ordinaries, for the reason that they are designed for special uses in excavating, and persons who excavate cavities differently are likely to want different special forms. Such differences, however, have no reference to the formula plan of nomenclature, as other forms can as readily be brought into this system.

In this list of specials each instrument is designed for the performance of a special act in excavating. The enamel hatchets are designed for chipping enamel by hand pressure in opening cavities in the bicuspids and molars. They are beveled rights and lefts and are somewhat distinctive in form and use. When the manner of handling them and their adaptation to place of use has been learned, they are unusually effective instruments. Indeed, besides their use in chipping enamel, they become the principal instruments for cutting out and forming both mesial and distal cavities in the bicuspids and molars, both upper and lower. Their angle of blade and form of edge is such that they naturally cut these cavities into proper form. And when properly supplemented by burs, they are very effective in extending these cavities for the prevention of the recurrence of decay at the gingival margin, or at the bucco-gingival and linguo-gingival angles.

The spoons are for the removal of carious or softened material in any position, but more especially in the large cavities in the bicuspids and molars, also for uncovering exposed pulps the broader blades are invaluable. Of these spoons the pairs in 12 centigrades angle seem to be preferred, though the 6 centigrades angle are the instruments heretofore generally in the market.

The gingival margin trimmers, two pairs of which are one size and another two pairs of another size, are for the one purpose of smoothing and beveling the marginal angle of the gingival wall in proximate cavities in the bicuspids and molars. For this purpose they have the cutting edge ground to a definite angle with the shaft. This is made 80 centigrades in the one pair, which fits them for mesial cavities, and 95 centigrades in the other pair, which fits them for distal cavities. The smaller pairs serve this purpose in places too narrow for the entrance of the 20 tenths width of the larger. These are the only instruments in the list that have cutting edges other than at right angles with the length of the blade.

Of chisels I have placed six on the list. Three of them are straight, and the width of blade only is given in the formula name, as chisel 20, or chisel 10. All have cutting edges at right angles with the shaft. Those designated as "binangle chisels" have the full formula name with an angle of 6 centigrades. They are so contra angled as to bring the working edge in the line of the shaft. The six form a very effective set for chipping enamel in the opening of cavities, and in trimming the walls to form. The angles of the binangle forms adapt them admirably to the trimming of buccal walls in molars and bicuspids in places where a slight angle of blade is necessary to reach the best position for cutting.

The discoids perform much the same office as spoons, and are available in positions of easy access. When direct access can be had, they are to be preferred.

The cleoids are available for almost any purpose demanding a pointed instrument. I use them much in opening pulp-chambers in upper bicuspids, and in beveling lingual enamel margins in incisors, also frequently in following out fissures in molars.

In forming sets of those of fewer numbers I would first cut out the list of spoons in 6 centigrades angle; second, the list of cleoids, and third, the discoids; fourth, the gingival margin trimmers 15 (95)-8-12 and 15 (80)-8-12, leaving the list stand thus:

Set of Specials No. 2.

Enamel hatchets	20-9-12 Pr. R. & L. bevels.
Enamel hatchets	15-8-12 Pr. R. & L. bevels.
Enamel hatchets	10-6-12 Pr. R. & L. bevels.
Spoons	20-9-12 Pr. R. & L. curved.
Spoons	15-8-12 Pr. R. & P. curved.
Spoons	10-6-12 Pr. R. & L. curved.
Gingival margin trimmers	20 (95)-9-12 Pr. R. & L.
Gingival margin trimmers	20 (80)-9-12 Pr. R. & L.
Binangle chisel	20-9-6.
Binangle chisel	15-8-6.
Binangle chisel	10-6-6.
Straight chisel	20.
Straight chisel	15.
Straight chisel	10—twenty-two instruments.

For a still shorter list, and the shortest list of specials that I could recommend, I would cut out from Set No. 2 all of the dimensions 10-6, thus:

Set of Specials No. 3.

Enamel hatchets	20-9-12 Pr. R. &. L. bevels.
Enamel hatchets	15-8-12 Pr. R. & L. bevels.
Spoons	20-6-12 Pr. R. & L.
Spoons	15-8-12 Pr. R. & L.
Gingival margin trimmers	20 (95)-9-12 Pr. R. & L.
Gingival margin trimmers	20 (80)-6-12 Pr. R. & L.
Binangle chisel	20-9-6.
Binangle chisel	15-8-6.
Straight chisel	20.
Straight chisel	15—sixteen instruments.

This list is really quite effective, though one who has become accustomed to the smaller sizes will miss them.

Of these lists No. 2 of the specials combined with No. 4 of the ordinaries, makes an excellent set for school work. It contains thirty-four instruments every one of which will come into active use in the ordinary infirmary practice.

Also set of specials No. 3 combined with set of ordinaries No. 5 makes a well-chosen short set of twenty-eight instruments that is quite effective for school work, though some very desirable instruments are missing.

These lists are extremely simple in their formula nomenclature and are easily learned by pupils. Of course other combinations of these lists may be made at will. Yet it is important that the direct relation of the formula names be carefully maintained in any lists made up for school use.

SIDE INSTRUMENTS.

Side instruments should be made to define formulæ, that they may receive definite names. For instance, in breaking up the list of specials for the formation of smaller lists, discoid 20-2-12 may be retained as a side instrument, or one of the cleoids may be retained. I like to have in the instrument list as side instruments hatchets 5-3-28 and 3-2-28 for cutting retention grooves in the incisal angle of incisor cavities. It will be noticed that the formulæ of these latter do not follow the lines of the list given. The number of such instruments added to working sets in schools should be limited to a very few favorite forms for some special use. Any considerable number of them will certainly cause confusion in the minds of the students, and interfere with the easy mastery of the list as a whole.

Other formula lists may be added when desired. This year I have added an additional list of long slender blades expressed thus:

Hatchets and hoes—12-8-12 and 22.
8-6.

Of these the blades in 12 centigrades angle are most excellent instruments for deep cavity work, and yet my experience thus far in teaching leads me to the conclusion that the introduction of this third formula list is undesirable. In other words, instruments in the other two lists so nearly take the place of these that it seems undesirable to burden the students with the additional list.

There is really no limit to the number of lists that might be formed by this method, and if I have now made this clear I have finished my task in this direction. But the more important consideration is the limiting of the instrument forms to definite lines easily followed by the student, and readily supplied by the manufacturer.

It must be distinctly understood that in ordering instruments by the formula plan the class name of each instrument must be given with its formula—as Hatchet 12-5-6, or Spoons 20-9-12.

It seems very desirable that some rule be established as to which instrument shall be called the right or the left in the instrument pairs. I will suggest that this be based on convenience of use in the right hand. That blade which when held as a pen with the point downward, has the convex side of the blade to the right is called the right-hand instrument; and the blade which has the convex side of the blade to the left is the left-hand instrument. In beveled rights and lefts the beveled side corresponds to the convex side of curved blades.

Teaching Instruments and Instrumentation.

When the time came for opening school this year, I felt that I could not begin without putting the plan for formula names to trial. The teaching of the mechanical forms, the adaptation of forms to the ends to be accomplished and plans of instrumentation were begun in Northwestern University Dental School this year under extreme disadvantage. It was really impossible that it should be otherwise in the beginning. It has come upon a class of three hundred and fifty pupils—juniors and seniors—after they have accomplished a part of their course by other methods, and with instruments of different forms. To make matters worse, on account of the slowness of manufacturers, together with the extraordinary demand for the particular instrument set used, only a portion of the pupils could be promptly supplied. This has been a great drawback to effective work. Yet the experience gained thus far has been a most valuable study of the effectiveness of the method and of the plans to be employed in teaching. Most pupils who obtained their instruments in time learned to read their points readily and have made rapid progress in instrumentation.

The proper place to begin this teaching is in the operative technic class; and for this purpose the pupil should be required to obtain his cutting instruments in his freshman year. One of the first and most important steps is to give the pupil a good working knowledge of the value of the millimeter, of tenths of a millimeter, and of centigrade angles. He should attain this in such degree that he will be able to cut bits of paper, or of some soft metal, five, ten or fifteen tenths millimeters wide, or five or ten millimeters long with reasonable accuracy without the use of the gauge; and to form any given angle. In this study he must first work with the gauge or with the printed form. A very excellent instrument for this study is the Boley gauge, an instrument that is specially well adapted to measuring teeth, and many other things in schoolwork and in the dental office. As this is being accomplished the instrument forms are presented one by one, as hatchets, spoons, hoes, etc., and the mechanical features of each, the nomenclature of its different parts and the relation of the instruments to each other explained. The capabilities of each form will be familiarized by exercise in their use in carving in bone, and forming cavities in teeth. In doing this, correct instrument grasps, and finger and thumb rests, will be taught. The pupil is then presented with the various sizes of each form and learns to distinguish them and to use their formula names.

In this way the pupil becomes fitted to enter the junior year in which this teaching begins to be put into actual practice in the mouth. Now a review of the instrument forms, their nomenclature, and the uses of each is made in connection with the teaching of the preparation of cavities. In this the lecturer and demonstrator at the chair become able to direct the student effectively, so that his use of instruments is begun correctly, and comparatively rapid progress made on right lines. This much neglected branch of operative dentistry, instrumentation, can now be taught effectively.

Cavity preparation, in my conception of it, should proceed in a definite order, step by step, which a student should be taught to observe strictly, to carry out with certain instruments, and with fairly definite methods of instrumentation. It is only when he is able to accomplish this work upon a definite system that he should be regarded as able himself to form his line of procedure in such a manner as will lead him to that high degree of skill in the future which we desire that our pupils should attain.

DIAGNOSTIC ERRORS.*

By W. Geo. Beers, L.D.S., D.D.S.

Diagnosis, the process of discovering a disease and its distinction from other diseases, by its characteristic signs and symptoms. Not only to know inflammation of the pulp from hyperæsthesia of the dentine, but scientifically to explore and explain the reasons for our conclusion. Repeated familiarity with the same disease may enable a dentist, as well as a physician, to make a direct and accurate diagnosis. In other cases, where the origin of the trouble is obscure and a disease has subjective symptoms resembling other diseases, the diagnosis has to be more or less differential. Simple gum-boil, in some of its signs and symptoms, resemble alveolar abscess. We observe the symptomatology essential to the one and not to the other, and summarizing them we form our conclusions. The pathognomonic signs, those which specially characterize a disease, are the chief guides in differential diagnosis.

From the point of view of scientific fairness, it is no exaggeration to declare that the wisest dentist is not the one who never makes mistakes, but he who rarely makes the same mistakes the second time. Error and failure are necessary stimuli to fact and truth. The men who say they never err are men who, perhaps, do not know that they do not tell the truth. There are occasions when we find ourselves overlooking, and perhaps interloping upon territory not our own ; and yet we should be ashamed of our ignorance if we do not possess sufficient knowledge to discriminate between the simple and the complicated, between that which demands our attention and the signs and symptoms which rebuke our meddling. Diagnosis may be as simple as direct, yet entirely devoid of the least pretence to the scientific. Any one can distinguish a case of severe odontalgia of an exposed pulp from a case of pericamentitis without understanding the scientific procedure by which the conclusion is arrived at. I think, that as a science in dentistry, the art of diagnosis is overshadowed by the fascinations of its practice. I doubt if, as a profession, we systematically adopt that precise and methodical examination, direct and differential, of obscure cases which is exacted in medical diagnosis. This is due to our circumscribed methods of education as well as of practice. As a rule, the diseases of the teeth are not alarming enough to prognosticate death, or even dangerous illness, and when they involve serious complications they pass out of our observation and care. Since medical men have surrendered the care of the teeth, neither dentists nor physicians know as much about their pathology in a scientific way, as they would were all dentists medical men, and all medical men dentists. The latter lack the discipline and development of a medical and surgical curricula, and what they learn of either is but a disjointed smattering ; the former treat the teeth with even more contempt than they treat corns,—that is, the teeth in health or after general illness may go to the dentist—or the devil, for all they care. The disabilities under which the dentist labors in diagnosis are apparent. Quite as much so if the educational methods and environment of the oculist had confined him as narrowly to the eyes as those of the dentist have confined him to the teeth. When we know that most of the diseased conditions of the teeth are but results of disease elsewhere ; that they represent the same departures from normal physiological action as diseased conditions in other parts ; that the boundaries of our pathology extend to the entire head and neck, the stomach, etc., we should recognize the important fact that while practically our art has its limitations dental diagnosis has none. The mouth has no more a fixed and unalterable standard of health than the lungs or the liver. There are the same variations and adjustments to varying circumstances in the oral cavity as in the bladder or the bowels. A diseased pulp is as simply healthy structure disturbed in its normal functions as the surgeon finds in a sprain or an aneurism. There is no more an isolated and distinct dental pathology than there is an independent ocular or aural pathology. The same natural forces move, and the same physiological laws govern the processes of disease in the teeth as in the heart or lungs. How then can we expect the problems of our pathology to be solved except by deputy? The limitations of dental education may make eminently successful practical men; but as we cannot know any fact scientifically by mere intuition, it is difficult to surmise how we can pretend either to accuracy in diagnosis.

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* Read before the Vermont State Dental Society, March 18th, 1898.

Why do we err in diagnosis? Because we do not *know*. Do not know what? Do not know the scientific basis and detail of diagnosis; do not know what we see, smell, hear, taste, touch Our very senses are apt to be deceived, and nothing is truer than that we cannot accept as infallible what we call the evidence of our senses. We cannot always believe what we see with the naked eye, nor yet with the microscope. Those who are familiar with the exploded inflammatory theory of caries can recall the microscopical errors even of Heintzman and Abbott. I remember the late Dr. I. H. McQuillen referring to this fact in looking at a large micro-photograph, one of a diatome, the pleuro-sigma angulatum. When held within focal distance of the eye, the sigma or spaces appeared hexagonal, but if carried beyond that they assumed a circular form, giving a good illustration of the fact that we cannot always believe what we see. The results of varying microscopical adjustment, and the revelations made by the use of increased power, are familiar to us all. Indeed we are met in our investigations by numberless obstacles to the establishment of fact, and are often tempted to hasty generalization and preconceived conclusions. Illustrations of this are older than the amalgam controversy of 1845, when it was stated, even by chemists, that the sulphuret of silver on the surface was a sulphuret of mercury. Jumping to conclusions, based upon imperfect observation of phenomena, has been one of the common mental gymnastics of the profession, and our memories, as well as our laboratories, are lumbered with the "cock-sure" infallibilities of ingenious inventors. Fact does not leap into existence out of mere fancy, as Minerva bounded at once out of the head of Jupiter. The history of errors in the dental creeds, every one of which had their dogmatic defenders, would make an interesting addition to the literature of dentistry. We have had many fads presented to us in our own lifetime, and it should make us modest in our assertions to reflect, that for every established fact we have the history of a hundred demolished fables. Simon Pure has so often turned out to be a Will-o'-the Wisp in disguise that experience makes one cautious of accepting as gold all that glitters. and yet truth has often risen out of error. As Bacon says, " Ex errore citius emergit veritas quam ex confusione." We need not therefore be deterred by our errors. If we were we would never discover a single fact, for there was never a single fact that was not born of a score of errors.

Now, to form a correct diagnosis we must at least know the physiological character of the structure we treat. Yet that is not enough. It is like knowing only half the alphabet, or like knowing by heart the impersonal Latin verbs, while ignorant of the first declension. In that way we are only " fractionally qualified " diagnosticians. To know caries from erosion, gingivitis from the oral effects of mercury, to distinguish pulpitis from pericementitis —that is not all of dental pathology.

The applications of ætiology are as necessary in simple odontalgia as in complicated fever, if our diagnosis is to be better than a guess. Proper treatment can only follow knowledge of the true cause of disease. A case of odontalgia is presented. Sound teeth by the ton have been extracted because the operators, chiefly the physicians who meddle in dentistry, did not know how to search for the origin of the pain. There are as many causes of odontalgia as there are methods of treatment. What sort of odontalgia is it ? Or is it odontalgia, or reflected neuralgia, or any one of a dozen other causes of toothache ? It may be neuralgia. If so, is it trigeminal or trifacial ? And if so, is it caused by dental irritation, or is of distant, perhaps of abdominal origin ? If odontalgia, is it local, and if so is it due to simple exposure of hyper-sensitive dentine, or to an exposed pulp, or to morbid conditions of the pulp without exposure, or to pulp stones, or to a dead pulp and alveolar complications ? Is it referred odontalgia, and if so, is it peripheral, central or cerebral, systemic or general ? Is it the odontalgia of gout, of rheumatism, of pregnancy ; the causes of each differ. The patient complains of pain in a lower bicupid, it is reflected along the mandible to the ear. It may be that the pain originates in a lower molar. We cannot trust the opinion of the patient. This is, no doubt, very elementary to this audience, but I use the simplest illustrations to point out the frequent need for more than merely local dental knowledge. Why do the physicians who extract teeth so commonly err in their diagnosis ? For the same reason that we err. Their knowledge of diagnosis is too commonly merely medical ; our is too commonly merely dental. It is important in all our practice to inquire how a particular disease developed. When, for instance, we find rapid and extensive caries in the teeth of an otherwise healthy patient, our duty is only half done by operating, or even by hygienic instruction. Exceptional effects have exceptional causes. The permanency of operations may depend as much upon correct knowledge of the cause, as upon skilful work. The causes are not always confined to the mouth, and our oral hygiene may be largely useless to prevent recurrence of disease. Directly, we know the true cause, we can proceed with some scientific accuracy.

I have long been convinced that one of the most valuable specialism in dentistry would be that of the exclusive consultant who would devote his entire time to diagnosis and critical examination, of all the possible influences which may act injuriously upon the dental structures. Our failures in diagnosis are frequently due to lack of time, especially in constituencies where consultations are "included in the bill of fare." There may be temporary or constitutional disturbances, such as anæmia, chronic diseases of the nervous system, of the liver, the kidneys, pregnancy, menstruation, necessary for consideration. We may err by attempting to blame the teeth when, as a cause, they are entirely innocent. We may attribute to carious teeth morbid conditions which have been merely coincident, and not consequences. Scrofulous caries of the molar bone near the suture with the superior maxilla may be attributed to diseased teeth, when they are in no way connected with the disease. A sub-maxillary lymph gland, adherent to the bone, in an early stage of suppuration may be mistaken for an outer pointing alveolar abscess. On the other hand. a developing tumour of the maxilla may be mistaken for an abscess: a lymphatic gland in the lower jaw, due entirely to strenuous conditions, may be mistaken for an abscess. Only recently I met a case of a discharge from the sub-maxillary gland extending to the clavicle, and which had been surgically treated off and on for two years, due to the death of a pulp after the rough treatment of crowning a lower dens sapientiœ. Many such cases, no doubt, occur to you all. There are so many motes in our own eyes that I refrain from referring specially to the many errors in diagnosis made by physicians in relation to the jaws. When we contemplate the immensity of our own ignorance, which long experience and careful investigation seems to intensify, we need to be charitable to the mistakes made by medical men in matters encroaching upon our specialty. Various affections of the salivary glands of the jaws, the antrim, the gums, the ear and eye, the throat, the nose, etc., originate in diseased conditions of the teeth, and are only properly treated by their primary or coincident attention. Simple abscesses are every day confounded with serious tumors; mumps with alveolar abscess, and *vice versa*. In dentistry we are infested with a class who escape diagnostic difficulties by the "practical" use of the forceps. They are nothing but quacks and tinkers, and were public opinion as sufficiently enlightened in the value of the teeth as in that of the eyes, they would be treated as criminals.

Medical Department.

A GOOD MOUTH WASH IN FEVERS.—Glycerine, lemon juice, rose water and chlorate of potash solution—in equal proportions.—*The Hospital Nursing Mirror.*

THE ACTION OF SALIVA ON BACTERIA.—Triolo (*Rev. d'Igiene e di Med. Prat.*, An. 2. N. 12, Naples) has reinvestigated the above subject by new methods. Having first thoroughly disinfected the mouth with corrosive sublimate one in 1,000 or permanganate of potash and then washed out with distilled water until no trace of the germicide could be detected, the saliva was taken fresh from the mouth, and its effect observed on various germ cultures. The result showed that the saliva possessed decided bactericidal properties, killing old cultures (five days) and diminishing the number of recent ones (eighteen hours). Saliva filtered (as in Sanarelli's experiments) has very little germicidal action. Very little difference was observed between parotid and submaxillary saliva as regards their action on germs. Indeed, the author believes that the chief germicidal action of the saliva must be attributed to the secretion of the muciparous glands of the mouth. A short bibliography is given.—*Brit. Med. Journal, Feb. 26th, '98.*

INFLAMMATORY INDURATION OF SALIVARY GLANDS.—Mr. Barling showed a specimen of chronic inflammatory induration of the submaxillary and sublingual salivary glands from the presence of salivary calculus which he had removed from a female aged thirty-nine. She first had swelling and pain in the submaxillary region six years previously, at which time a small calculus escaped into the mouth, with relief of symptoms. During the last twelve months the patient had suffered repeated attacks of pain and swelling, and a few weeks ago another small calculus escaped, but with very little relief. When she presented herself both the glands were stony hard, very fixed and adherent to the floor of the mouth, but owing to the density of the tissues no calculus could be felt. With considerable trouble both glands were excised, the floor of the mouth being freely opened. Examination of the specimen showed simply a dense infiltration of the gland tissue without any appearance of new growth, and a calculus, measuring nearly three-quarters of an inch in length, lay in a dilated duct.—*Brit. Med. Journal.*

THE BLEACHING OF TEETH WITH PYROZONE.—At a meeting of the New York Odontological Society, held on the 19th inst., Professor Edward C. Kirk, of the University of Pennsylvania, gave an interesting address on the bleaching of teeth by means of pyrozone. He pointed out that the pink discoloration was due to the permeation of the tubules by hæmoglobin from disintegrated red blood-corpuscles, while the browner stain was due to the deposit of hæmatin from disintegration of the hæmoglobin. The speaker showed in two tubes the difference between blood which had undergone disintegration and that which had not done so, the former being clearer and more translucent, the latter murky and grumous. He then painted to a bright red a sheet of white blotting paper with the blood containing free hæmoglobin, and converted a portion of the hæmoglobin into hæmatin by the application of acid, thus turning it brown. The application of pyrozone at once bleached the bright red of the hæmoglobin, but had but little if any effect upon the brown stain of the hæmatin. Professor Kirk went on to state that he had had some success in this latter kind of discoloration by the application of oxalic acid after treatment with the hydrogen dioxide. It would be interesting to know whether similar results would follow the application of hydrogen dioxide and oxalic acid in the discolorations of the skin common in old-standing syphilis, etc.—*N. Y. Med. Journal, April 23rd, '98.*

THE FEAR OF DEATH.—Man occupies in view of death a situation that is peculiar, for he is probably the only being that knows he has to die. The battle against death spurs an immense number of men to study and work ; and all the great intellectual and moral creations in art, religion, and science have been produced under the influence of the feelings excited by the certainty of that event. Yet the psychology of the ideas and emotions relative to death is still to be constructed. Man is not normally preoccupied with the thought of death. While he is in full vigor of health and strength he is not afraid of it and takes little heed of it. The idea that he will have to die some day rarely enters his mind, and when it does present itself it is so vague and relates to an event so uncertain as to the time when it will occur that no distress is produced by it. This inertia of the thought of death in the strong man follows from the important agency exercised by organic sensations in determining the psychical condition. We know that not only exterior phenomena acting on the sensorial organs that are directed to the outer world produce sensations in us, but changes of condition originating in the organism itself are also accompanied by sensations. The parts of the body that are by their situation withdrawn from the direct influence of external agents possess a special sensitiveness through which we perceive their changes of conditions—*From The Fear of Death, by* M. GUGLIELMO FERRERO, *in Appletons' Popular Science Monthly for December.*

Selections.

GERMICIDES AND ANTISEPTICS IN DENTISTRY.*

By C. Bunting Colson, M.D., D.D.S., Charleston, S. C.

I take the liberty to plan this essay on the classification of the conditions indicating the subject, instead of classifying the drugs, believing in this manner I can more definitely present the subject.

The following is a list of pathological conditions, or otherwise, which includes nearly all the conditions that germicides and antiseptics are indicated in dental practice:

1st. Normal; Prophylaxy and Accidental Lesions.

2nd. Stomatocase, in three divisions: 1st, Aphthæ; 2nd, Thrush; Stomasitica; 3rd, Stomatitis Gangrenosa.

3rd. Calcic Inflammation, Uilitis and Gingivitis.

4th. Phragedenic Pericementitis.

5th. Intra-Osseous Suppuration.

6th. Dental Canal and Pulp Antisepsis, and Dental Canal Sepsis.

7th. Disinfecting Instruments, etc.

1st. Prophylaxy—In a healthy mouth, no therapeutical agent is indicated; but there is a fast growing popular demand for a mouth lotion of an antiseptic and germicidal order to prevent disease and caries within the mouth. I am much opposed to giving any of the mouth lotions that are used in diseased conditions for *constant use* in a healthy mouth, as all, that is, all that have any therapeutic value are either stimulating, astringent, or alkaline, and will by long and constant use do injury. This is not a presumption, but a fact, noted from close observation. Cleanliness is the only prophylactic needed in health. I do not know of a single therapeutical agent or compound that I can advise *for continuous use*, but water and the intelligent use of the brush, silk or floss flag.

In accidental lesions with healthy surroundings I am still of the opinion that they are best left alone, unless symptoms of parasitical complications are evident, then treatment will be as mentioned under that division.

2nd. Stomatocace: 1st—Div.-Aphthæ. The several forms of aphthous stomatitis and its etiology cannot be given here, which is systemic and eruptive, breaking out in apparently perfectly healthy mucous tissues. We cannot cure the disease by local treatment, but we can give much relief to our suffering patients and prevent the still more painful condition of parasitical complication. What antiseptic treatment or agent is giving the best results in the general treatment of these diseases? In my experience the salts of the basal element boron stand first. Boracic acid and the sodium biborate known as borax, when used with the proper media and strength, gives the best results in *preventing parasitical complications*, and act best as a specific to the lesions, as the boric acid seems to have a most gratifying therapeutical effect on the small excretory glands and follicles of the animal system. It is an old and ancient remedy, but gives the most gratifying results to-day as when the ancient mothers of the days of Herodotus placed it in the mouth of her aphthous cachectic baby, or rather in the mouth of her parasitical stomatical baby. Giving good results when indicated in young and old, and the mouth lotion that has it for its prime therapeutical agent may be depended on to give good results.

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*Awarded First Prize ($200) in "Borolyptol" Prize Competition.

I will here include the 2nd division of stomatic diseases and treat as one in the further discussion on the antiseptic treatment of these lesions.

Division 2nd. Thrush or Stomatitis Parasitica—This disease, like the 1st division above, seems to inflict their presence during some abnormal condition of the system when it is poorly nourished, and the circulation imperfect, but in this disease it is positively a specific parasite that causes the painful lesions. As stated, that boric acid and biborate of sodium stand first among therapeutical agents in controlling and preventing the disease. It is used with most excellent results in the following compound mouth lotion, and by an experience of many years I can find no better form:

℞.—For 5-ounce solution:

Boric Acid	2 drams
Sodium Biborate	2 drams
Eucalyptus	½ dram (= ½ ʒ)
Glycerine	4 drams

Mix cold. Shake well before using.

Perfumed and made pleasant to Q.S. ad. cinnamon water 5 ounces, to which is added 10 drops of the oil of gaultheria and one grain of saccharine.

Now for a few words on the above and its use. It being an over-saturated solution, the powdered boric acid and the borax will remain largely undissolved in the solution, and I purposely have it so. The ordinary effect of aqueous mouth lotions remain in the mouth so short a time, and particularly in stomatitic mouths that have an unusual salivary flow, all traces of the antiseptic agent is soon washed away. I have my lotion doubly charged with these floating powders that will lodge about the mouth for some time and give the continuous effect. Glycerine also assists it to remain in the mouth, and proves a very happy medium in assisting the boric salts. The official form of boro glyceride is used by some. I prefer the above as positively giving better results by its adaptability and longer therapeutical effect. So far this is very good treatment to control and prevent the increase of the disease, but the dentist who depends on the antiseptic and astringent mouth lotion alone, and wishes to give rapid relief to his patient, will get slow results, and for the rapid cure of these lesions a more positive treatment is indicated. It is a fact that in all the pathological conditions of the mouth, be the lesions eruptive or caused by organisms, the best results for the cure and relief is the positive treatment direct to the lesion by some powerful escharotic or astringent antiseptic. For instance, in the eruptive ulcers of aphthæ, the ulcer should be washed off, or out if deep, with the three per cent. hydrogen dioxid, and the surface carefully touched over with either nitrate of silver or a tri. chlo. acetic acid crystal, or a twenty per cent. solution of sulphuric acid also gives excellent results. If done properly and the mouth kept clean antiseptically, the lesions immediately heal and lose the extreme painful state that they so often have. With the parasitical thrush lesions, this class, the treatment should vary according to the conditions. If it is only one or two places affected, wash the lesion off with strong bichloride of mercury solution, about 1 in 100, using a pledgit of lint wet in the solution, then touch the surface over with the tri. chlo. acetic acid or nitrate of silver. But if the parasitical lesion has spread over a large surface, use the bichloride about 1 in 200 and wipe the surface over carefully. If any pus shows itself evident, by all means use the hydrogen dioxid in the same manner, and then apply a twelve per cent. solution of tri. chlo. acetic acid.

The pain of these applications soon passes away, and your patient is soon very comfortable and the cure rapid. It is always well to give the patient a good antiseptic mouth lotion of a quality that will last in the mouth, not too generally stimulating to the mucous membrane, as a very stimulating lotion, alcohol, and even some of the most generally used mouth lotions when used strong will bring on a state of very sore mouth and lips of aphthæ and Herpes vesicles. The lotion given should be used constantly during the course of the disease, not three or four times a day, but frequently to keep the influence of the antiseptic and germicide action constant.

A few words before passing the subject of antiseptic mouth washes, which I wish to impress as the most important idea expressed in this essay. It is very necessary to cleanse the mouth of all the viscid acid mucus that clings to the teeth and gums and about the mouth before using a mouth lotion to get its therapeutical action. This mucus is a most excellent culture media in the mouth for the many micro-organisms that infect the mouth and the general system. How shall we cleanse it or remove it? It is thought that germicide lotions will cleanse and sterilize, but it does not. This is also not an assumption, but an assertion made after numerous practical experiments and tests with all the advantages of a bacteriological laboratory at my command. This viscid acid mucus will not absorb or combine with the antiseptic and germicide lotions of the strength used in the mouth to thoroughly sterilize it. And the toothbrush will not, or any other ordinary means remove it but to a limited extent. I earnestly urge the use of the only harmless agent known that will assist in removing and making it possible to thoroughly cleanse the teeth and gums of this infected deposit. The magnesia hydrate, Mg. H_2, O_2, has the most fortunate and pleasant action on this viscid acid mucus by neutralizing the acid and precipitating the mag. hyd. in a jelly-like non-clinging mass easily removed by the brush from gums and teeth and carrying away in its mass all germs and spores.

The act of just rinsing the mouth with a small quantity of this mag. hyd. and brushing the teeth places the mouth in a better condition than any mouth antiseptic lotion, and in fact prepares it for the possible therapeutical effect of the lotion that was before mere folly to use.

The 3rd Div. of Stomatocace—Stomatitis Gangrenosa. This distressing condition of the gums and the bony septums of the alveolar process is caused by poisonous medicates. The treatment must be largely systemic. But in all these cases of salivation with purulent discharges through the gums much can be done to relieve the unpleasant condition to the patient and to retard its progress, urging first cleanliness, and the constant use of a germicide lotion to prevent parasitical complications and the direct action of some powerful excarotic astringent to the gums at the places affected After years of test and careful noting the results, I feel sure that. sulphuric acid in about 12 to 20 per cent. applied to the gums down to the process *immediately after the application* of a good syringing out of these pockets and purulent places with hyd. dioxid, surely gives the best result of all. Do not use any application until these spaces between the gums and the teeth are free from pus, and then apply the acid solution on a thin piece of orange wood. I have never discovered the benefits of carbolic acid in a mouth lotion, or in direct treatment of any lesion or disease of the mouth. As to the tinct. of myrrh, which is so commonly used, I positively repudiate it, in fact have found it did more injury by leaving an insoluble deposit under the gum border, between the teeth and protected places, and frequently causing gingival irritation or increasing it. Its astringent antiseptic or germicidal properties are far surpassed by other agents. I do not advocate the use of alcoholic tinctures or extracts that lose their integrity, as it were, on coming in contact with the saliva and precipitate a gum or resin. There are many antiseptic lotions presented to us that the manufacturers claim contain such drugs for therapeutical action, such as benzoic acid, myrrh, etc., but when analyzed I fail to find any or but a trace of such drugs, as they are usually left in the filter, having lost their officinal integrity by precipitation on coming in contact with too much water. And again this slight antiseptic action or astringent power amounts to nothing on the pathological conditions found in the mouth that need the most powerful effect to cure. The antiseptic that takes the place of these many popular agents is eucalyptus. Eucalyptol is, I believe, most frequently used, but experience and close observation has caused me to use eucalyptus, and I advise it as the best general antiseptic for a mouth lotion, as its effect is lasting and stable in the mouth, with no injurious qualities.

No. 3. In Calcic Inflammation or Gingivitis—Cleanliness and the removal of all deposits is often all that is needed. If pockets are found wash out with hydrogen dioxid and use general antiseptic lotion given. Stubborn places that will not heal, often caused by the presence of some imbedded parasite, use 12 per cent. tri. chlor. acetic acid or sulphuric acid. Frequently this disease is constitutional and the mucus follicles seem to poison themselves with their own extreme acid excretion. The cause to my mind seems seems to be fermentations in the large intestines, and good results can be had by giving salol, beechwood creosote, or, best of all, boro-glyceride as an intestinal antiseptic and anti-ferment, and continue the treatment until the patient has taken plenty of special out-door physical exercise to give the system the proper tone, more perfect digestion and the intestines the natural movement. The pleasant effect of boric acid and borax on the mucus follicles should not be passed here without a special line to their value. This therapeutical effect is noticed not only in the mouth, but on all excretory small glands and follicles, particularly in the ear, eye, nose and mouth. In acute gingivitis where an antiseptic mouth lotion is indicated, one should be used that contains largely of boric acid, and I prefer one that has a surplus of the floating salt that will lodge around and give more lasting effect.

4th. Phragedemic Pericementitis—or Pyorrhœa Alveolaris, as we all know it. A constitutional symptom and positively can be cured by surgical and escarotic antiseptic treatment of the lesion, but it will possibly return to the same part at some future time as long as the systemic causes are present. Treatment, *cleanliness with extra care*, and the use of a good borated mouth wash. Deposits removed by surgical means, pockets and lesion washed out by hyd. dioxid. Then apply to the entire lesion a 12 per cent. tri. chlo. acetic acid.

5th. Intra-Osseous Suppuration—If the abscess or pus is at the apex of the tooth only, treat, if possible, by the excellent antiseptic properties of hyd. dioxid, through the canal, until the pus ceases to form. There is no other treatment or agent that gives the result that this does. If the pus has formed a fistulous track to the gum, force the hyd. dioxid through the canal out if open, until it bubbles out freely on the gum. This can be easily done by filling cavity with piece of soft dental red rubber and force hypodermic needle through into canal and inject. Chronic stubborn cases must be treated from the gum, and by burning off or excising end of root if necrosed, and the fistulous track often has to be washed out with diluted sulphuric acid to assist the expoliation of the dead bone.

6th. Dental Canal and Pulp Antiseptics, and Dental Canal Sepsis—So much has been written on this subject and so many various agents and methods of germicidal and antiseptic treatments are advocated, that I will only advocate that which I believe to be the best, and give the reason, which is thoroughly scientific and true, and why I deem it the best.

In pulp canal antisepsis, before entering or cleansing cavity, put on the rubber dam, *if possible*. Wash out the cavity now with either alcohol or chloroform, as it removes quickest all grease or mucous. Excavate cavity and extract devitalized pulp ; enlarge the chamber to its dimensions so as to freely expose the canals, and remove every particle of tissue possible in them. Now apply warm air, not very hot. This must be done slowly, drying out all moisture from canals, and evaporating for some distance the serum in the tubuli, just as it does in a cavity when hot air is used for sensitive dentine. Now close your apical foramen. I am still advocating lead when possible to use it, on account of its germicidal properties as well as its non-irritating qualities, having thoroughly sterilized it before using it, or whatever I use, that it carries in no germs. Up to this time no antiseptic or wash of any order has entered the canal. I now flow the canal full of best quality of oil of cloves, and absorb the surplus with clean and carefully prepared bibulous points that are antiseptically kept bottled for this purpose. I now apply the hot air and vaporize the volatile oil remaining in the canal until apparently dry, then fill the canals, it matters little what, so long as it is free from the germs or spores of micro-organisms.

The oil of cloves seem to give us that success we wish in this delicate antiseptic and germicidal operation that no other antiseptic yet discovered. There are many more powerful antiseptics than the oil of cloves even among the essential oils, but they do not fill the conditions by being as adaptable. The cedrene oils of the several classes of essential oils seem to give the best results for such conditions. The oil of cloves seems more *compatible to all conditions needed*, and positively gives the success that others do not reach. It is because this oil is absolutely compatible to the serum of the tooth, that it is very diffusible, yet it is so very lasting, and preventing the very first form of fermentation or germ development, and lastly, of a peculiar searching penetration it has when heat is applied to it and it reaches near its volatile degree. Thus, it is driven back into the tubuli and the substance of the tooth embalming it for all eternity, if other conditions hold. It is these cedrene oils that have kept the only organic tissue extant to-day that antedates history, as thus we see in the mummies of ancient Egypt. We have nothing to-day that will embalm and keep organic tissues safe from the destruction of germs for half the time that these cedrene oils have done. The bichloride of mercury that stands the highest of all our modern germicides, fails in time by its continuous chemical action on the tissues it preserves, until it loses its power or destroys what it was to preserve.

The same fortunate result we have in the antiseptic treatment of an exposed pulp. With the above precautions to keep the cavity clean, using no impure water or escarotic in the excavated cavity, but just flow over your *healthy* pulp a few drops of pure oil of cloves and absorb the same with your antiseptic bibulous paper-points, then flow over the pulp and cavity your oxy. phosphate mixed to a creamy constituency and wait until it hardens, putting no pressure on it until it does harden, then balsam over the filling before allowing the saliva to reach it, and you will save more pulps than all the other methods of capping. I do not advocate the use of any escarotic antiseptic on the pulp, it reduces their vitality. The oil of cloves is not an irritant to these tissues, and seems to soothe and completely sterilize it of all germ complications unless they have already made their way into the tissues of the pulp. Be sure you have a healthy pulp at all times, and if in doubt, destroy, in justice to yourself and patient.

In septic canals the treatment as to precaution before entering canal are the same as presented above, but I here advocate drilling out the canals as far as it is expedient at any time to do so. Thus we carry off mechanically much septic tissue and coagulated serum at the mouth of the tubuli that was caused by the fermentation in the canal. I then apply the low heat to drive back the serum ; then, if there is no complication outside the foramen, I close it and apply the oil of cloves to canal, then vaporize with heat, even to passing a hot root dryer into each canal, to vaporize that at the apex and drive it into the tubuli, or any particle of the tissue that may be left in the canal, and embalm it for all eternity. Where there are complications beyond the foramen I treat as suggested in intra-osseous suppuration, and after drill out the canal to remove the coagulum at the mouth of the tubuli that was caused also by the hyd. dioxid, as there may be some annerobic spores beyond it that the oil of cloves must reach and embalm.

As there are germs all about in all dental offices keep lead points for filling apex and bibulous points for drying out the oil in bottles of powdered boracic acid. The instruments should all be washed in tepid water and caustic soda, then wiped off with a cloth soaked in boro-glyceride, and that is all that is necessary. I do not advocate shoving my delicate edge tools in sterilized sand or gravel, or placing them in contact with corrosives.

Thus I close my germicidal and antiseptic treatise, gleaned from a successful practice of eighteen years of close observations and test, always looking for the best.

CONGENITAL TEETH.

Dr. J. W. Ballantyne gives particulars of three additional cases of this condition : (1) Mother, a multipara, who had nursed six cases of scarlet fever during her pregnancy. The presentation was a face, and the presence of the teeth rendered the diagnosis of this rather difficult. There was a "caul." The teeth were the upper central incisors, one well and the other poorly developed. The boy was now sixteen months of age, vigorous, healthy, had eight teeth, including the two above noted, which appeared likely to remain, as they were larger and stronger than the others. The child was reared on the bottle. The combination of face presentation and congenital teeth was rare. The congenital teeth neither dropped out nor required removal, and they were well formed. (2) This case occurred in South Jarra, Melbourne, but full details were wanting. The teeth dropped out, necrosis of the alveolar process followed, and the child died. Whether the death was due to the presence of the teeth or not is uncertain. (3) The father had syphilis twelve years before the birth, and was treated for two years with iodide of potassium. The mother was non-syphilitic. One previous child nine years before, who suffered from eruption and died of marasmus. The weight of the present fœtus was seven pounds. The teeth were two lower central incisors, movable in their sockets, and the alveolar process for about three-quarters of an inch was elevated three-eighths of an inch above the level of the gums on either side, and was also movable. Below this hinge process was an exostosis in the middle line of the symphysis menti, which disappeared later. The mobility and elevation disappeared later, and the teeth became fixed. The mother's nipple was wounded before the teeth were discovered, and a mammary abscess resulted. A few days after birth the child developed pemphigus, and when six weeks of age, " snuffles" and a papular eruption appeared. The latter disappeared under the use of mercury. Simultaneously, the teeth became soft and were removed by the finger-nail, but the roots remained. At the age of eleven months, the roots were filled with granulation tissue level with the gum, and no other teeth had appeared. Some of the irregularities here might have been associated with the syphilitic state, but it was possible that the process was an extra-alveolar dental sac, containing two supernumerary as well as congenital teeth.—*Brit. Med. Journal, March 19th, '98.*

EDUCATION AND STARVATION.

President Harper, of Chicago University, recently, in a public address, stated that scores of students of both sexes in that institution are compelled, in order to pay their way, to struggle along on the scantiest food, and that occasionally they succumb in the effort. He urges strongly the necessity of proper nourishment for the body, if the owner of it is to be of any use in the world. Education will do little for the student if it is obtained at the expense of physical health and strength.

Chicago University is not the only place where physiques are ruined in the mad race for what is called education. All universities can furnish examples of what Dr. Harper calls strong-minded but weak-bodied men, and the schools are doing even more harm in this way than the universities. If the latter are most to blame it is because they set both the example and the pace. To make matters worse they persist in keeping up a survival of barbarism in the form of competition for prizes or relative standing, as if it were possible by any means known to human beings to tell in every case which of two men is the best.

Any reform movement looking to the substitution of more rational ideals of culture, must emanate from the universities, if it is to make rapid headway or some progress. All who teach lower institutions are trained either in a university or by those who have been so trained, and in this way vicious methods are disseminated and perpetuated. But who is to reform the teaching in the universities?—*Toronto Star.*

HYDRONAPHTHOL IN THE TREATMENT OF DENTAL PULPS.

Dr. Sidney S. Stowell read a paper before the First District Dental Society, State of New York, on the usefulness of hydronaphthol in the treatment of dental pulps dead or alive. Hydronaphthol possesses one-fifth the strength of bichloride of mercury, twice the strength of beta-naphthol and iodoform, three times the strength of salicylic acid and fourteen times the strength of carbolic acid, and is absolutely non-poisonous, non-corrosive and harmless. Dr. Stowell has used this drug constantly for five years to the exclusion of nearly every other antiseptic, and with the utmost satisfaction. When opening up a tooth in which the pulp has been dead for some time, if a twenty-five per cent. alcoholic solution be used none of the dreaded evil results will follow. The penetrating property of the alcohol and its affinity for moisture will carry it ladened with its hydronaphthol in solution to the remotest nook of the pulp chamber and canals, even to the apex and through to the soft tissues, as well as into the tubuli of the tooth. Powdered hydronaphthol, one part mixed with three parts zinc oxid powder, then mixed with the phosphoric acid in the ordinary way, makes the very best capping for exposed or nearly exposed pulps, or as an antiseptic non-irritating lining for all classes of fillings. He first bathes the cavity with the alcoholic solution, and the evaporation of the alcohol leaves a deposit of hydronaphthol on the cavity. Combined with zinc oxychlorid in the same proportions as with the oxyphosphate, it makes a splendid root canal filling.—*November, '97, Cosmos.*

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EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. = = = = MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

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7 WEST 58TH STREET, NEW YORK CITY.

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EDITORIAL NOTE.

WE received a rather agreeable surprise in the prompt receipt of the full proceedings of all the papers of the Ontario Society meeting. It is the first time in our experience. A large amount of other material was prepared, and we are obliged, in accommodation to the printer who has kept it in type for over two months, to include it in this issue and reserve the papers of the Society for the July issue. Our publisher has gone to much expense in the way of illustrating the last few issues. If our readers will remember that the small subscription to this journal is insufficient, *per se*, to pay the expense of production, they will readily realize the obligation we are under to our advertisers. This journal, the only one in the Dominion, has never yet received the associative backing to which, we think, it is entitled. Were it not for the support given it by our advertisers, it would have to be considerably reduced in size. Each issue actually costs more than the subscription price.

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Original Communications.

TINFOIL MATRICES.

By W. BOOTH PEARSON, F.R.C.S., Dublin, Ireland.

Oxy-phosphate fillings are a necessity in daily practice, and as it is not always advisable to use the rubber dam in the case of irritable or very young patients, some other means of excluding moisture must be sought. During the past ten years I have been able to keep such fillings damp proof, during the progress of the chemical union that causes consolidation of the filling in the tooth cavity by the aid of pieces of tinfoil. The cavity in the tooth is prepared in a suitable manner, and the margins carefully shaped. The tooth cavity is filled with absorbent cotton carefully packed into it, after the use of the warm air syringe. A piece of tinfoil of suitable thickness is cut out, measuring one inch or one inch and one-half square, and placed in readiness. The filling is carefully mixed into a pasty mass. The cotton wall is removed, and the plastic filling gently packed into every part of the cavity. Some of the overplus of the filling left on the mixing slab is placed on the piece of tinfoil, in a suitable position. The tinfoil is quickly placed over the tooth and the cavity, and folded over the lingual and buccal surface or the palatine or buccal surface as the case may be. The tinfoil is gently brought into position with the forefinger and the thumb, or with the forefingers of the right and left hand. A stroking action of a right hand finger, while the left index finger holds the tinfoil in position within or without the dental arch, will enable the filling to be solidly pressed into place in the cavity of the teeth. The excess of material is thus squeezed over the teeth and the tinfoil can then be gently burnished over the filling so as to make a contour suitable to the case. In the case of bicuspids and molars, the patient can supplement the procedures of the dentist by steadily closing the bite on the tinfoil, and thus give the dentist a true contour of the masticating surface. In many cases where the approximal cavities in maxillary incisors have to be filled, the tinfoil can be folded double, and passed between the teeth before the filling is placed in the cavity. This flexible band of metal can be gently drawn into place *round* the tooth, and thus cemented on the enamel surface on each side of the cavity, so that the moisture is completely excluded during the setting of the filling. Once the filling sets hard, the tinfoil can be peeled or scraped off the tooth or teeth, and the dentist will find if these details have been skilfully and gently carried out, a well contoured filling with a smooth surface that needs very little final trimming. Sometimes I place a band of tinfoil round a tooth and then pack in the oxy-phosphate filling. The band is brought to its intended place, and I then envelope tooth and band with a square piece of tinfoil smeared with the filling. This is rubbed or folded into shape and position, and all moisture is excluded. With young children tin foil used in this way will be found of great service to the dentist, as it does not give them any pain or discomfort, while at the same time, the filling is kept protected from the action of the saliva during the progress of setting.

I am of opinion that oxy-phosphate fillings treated in this way will be found to be harder and more durable under ordinary conditions than when the plastic mass is packed and burnished into position and contoured with oiled instruments. I have had excellent results during the past three years by using both Dr. W. N. Ames' "Metalloid" and "Oxy-phosphate of copper" fillings in young mouths. I have kept careful records of these fillings by means of charts, so that what I bring forward is something more accurate and valuable than an "opinion" or an "impression" on the matter, or the fact that they have "an unprecedented sale."

Few young children seem to me to bear with patience the use of the rubber dam, and as a willing patient should be the rule rather than the exception with patients of ten years, I offer my experience in the hope that it will meet a want in ordinary practice that is not altogether filled, by the use of rubber dam napkins, absorbent paper, or even saliva ejector. The tinfoil commonly used for filling teeth is much too thin for this purpose; I prefer to use tinfoil somewhat of the stoutness of writing paper as it will bear the necessary pressure and manipulation without breaking. Sometimes I fold the square of tinfoil into a strip or band of three or four thicknesses as may suit the space between the teeth, and thus gain sufficient support to bring pressure to make a contour filling above, or below the gum, as the case may be in the maxilla or mandible. A few experiments on some natural teeth set in plaster, will show anyone who cares to carry out this procedure that tinfoil can be made a valuable adjunct in many cases where oxy-phosphate plastic fillings have to be used. I showed this method to several dental friends at my house last August, and they were much pleased with the adaptability of the tinfoil to the purposes I have endeavored to describe.

STORY OF A GOLD FILLING.

By E. A RANDALL, D.D.S., Truro, N.S.

Thirty years ago Dr. —— was one of the foremost in his profession, enjoying a large and lucrative practice in a New England city.

Twenty-five years later he was a poor old man not fit to appear in the operating room, and was employed to polish plates in a laboratory.

It was my duty to extract several teeth for a lady preparatory to having an artificial set. " See," said she, " that gold filling in the front tooth ; that was put in by Dr. ——, twenty-five years ago." The filling was still perfect. I took the extracted tooth into the back office and showed it to the old man. " Here is an old acquaintance," said I ; " do you recognize it ? " (Of course he did not.) " Mrs. —— says you filled that tooth for her twenty-five years ago, and I have just extracted it." The old man's eyes filled with tears. " Give it to me," he said, and he was more pleased than a child with a new toy.

Surely there is a lesson to be learned from the story of the gold filling.

HINTS.

By A. LAZY MAN.

1. I could write six pages instead of six lines on any subject. But I'm too tired, and I never read or write anything that will spoil a yawn.

2. Sharpened chisels dipped in oil trim vulcanite as easy as cutting soft chocolate.

3. If you pack vulcanite warm *and wet*, it packs clean as well as easy.

4. Save your eyes—and your patients—by wearing glasses when you need them. Go to an oculist—no one else—and find out if you need them. No man knows the *exact* condition of his own eyes any more than of his own teeth.

5. Nothing better to soften the hands and cleanse nails and fingers quickly than hartshorn ammonia, twenty or thirty drops to a basin of water. Use to clean any blessed thing about your office. Cheap.

6. If you are afraid or too prejudiced to test Iever's Pheno-Banum ("Quick Cure") you should have died before now.

7. If you *ever* put an all-gold crown in a conspicuous place you err in taste, to say the least. Wonder some one doesn't get his portrait, or his name and address engraven. An all-gold crown conspicuous is a sign that the wearer is vain and lacking in nice feeling, and that the maker is about equal.

REPAIRING A GOLD CROWN.

By E. A. Randall, D.D.S., Truro, N.S.

Just suppose you have made a gold crown, and in finishing you go through the shell making an unsightly hole. If you undertake to solder this the chances are that you will have three or four holes caused by the solder melting out at the joints. To prevent this trouble, paint the crown all over the outside with whiting mixed thin except around the hole which you wish to repair, fill this with a plug made from gold foil, touch it up with a drop of borax water, and put a bit of gold solder inside, heat it with blow-pipe and success will be the result.

Correspondence.

To the Editor of Dominion Dental Journal:

The Vermont number greets us, and the familiar face of Mr. Towne. We surmised that he was off to Palestine. He is a glib talker. What a factory of mental products he has! We think he may have the "Inspiration of the Almighty, which giveth understanding."

Illustrated journalism is among us, we guess, to stay. We sooner or later come to accept the customs of the country. We think we hear adverse remarks here and there concerning some of the late pictures. Is it not getting commercial, etc., etc.

The raciest things we are having just now within our borders are spicy editorials—some extremely lengthy, and more to come (doubtless). Dr. Crouse is a hard man to put down. He is not half valued for his unselfish labor in behalf of the illegai burdens he has relieved us of and still laboring to do. Some day (fifty years) hence he may get a monument; but his *real reward* he gets as he goes along, for this always comes to those that labor for the right. Dr. Crouse has no war with legal claims, he is out and out against illegality—who is not ?—and the best way to sustain him while he is in the fight is by finance ; that is the best sinew of war. Just now our nation's pulse is quickened on this line, for Spain says we have got to "walk Spanish," and we have them. "We *won't* do it."

Movements are on foot for sounding the dentists regarding the formation of an Eastern branch of the National Association of Dentists. We see the name of Dr. Gorrie heading the list for the call. He has not before taken much, if any, part in our national bodies. He is a useful man and can doubtless carry more or less influence by inciting a larger interest among the Brooklyn fraternity. It means a good deal to get up a popular move in the formation of new movements among dentists. There is no disguising the fact that there is an immense apathy among dentists concerning dental bodies. We are not very sanguine that there will be a very large augmentation of interests, yet there may be. There is no little addition of the younger members noticed by us in our neighborhood for joining societies, certainly in the district and odontological societies. This may become more apparent during the coming year. There is a growing feeling, that we are becoming burdened with indications of a decided decadence of practice along professional lines, not only in our immediate vicinity. Nevertheless, we are firmly convinced that legislation will not produce any diminution of it, no more than prohibition can stop men and women from becoming excessive in drinking habits.

There is a decided impression gaining ground, that the action of society men is fostering exclusion, *i.e.*, they intend to labor to form public opinion, so that they will come to believe that no one outside of a dental society is a fit subject for practice. It will *never* be successful, and we say the less of such ideas the better. It is not a purpose at all worthy of truly professional men. A local example is the one roadway to a healthy elevation. We think we see a steady growing sentiment in favor of the revival of clinical gatherings ; this we consider a step in the right direction for securing an attraction to the younger portion of our calling—men will see their self-interests in the clinic and make them more attractive than ever.

The New York Institute of Stomatology has held their May meeting which has proved one of no ordinary interest. All of the papers were well presented. They were strong and firm for the positions they took. We rarely have seen so good a spirit manifested. All of the discussions were frank and decided, but no ranting at all. We think that there seemed, at least, to be a thought to let everything stand on its merit. The advocacy of an independent journal was strongly put, and, we think, righteously, for there can be no reasonable opposition if it can be supported. We think we see, more than before, a larger prospect of there being an independent journal, and, as it was intimated, it may be one of the outcomes of the new National College. Why not? In a circular issued in '85, advocating the formation of an International Dental Association, a chronicler, or official organ, was a firm thought with us. We sent this tract to our most representative men both in this country and abroad. This circular was more in the thought of a suggestion. We were much gratified to receive so many approvals. In Europe we selected from a goodly list furnished us by the late Dr. White, editor of the *Cosmos*, and one of the answers we valued highly was from Sir E. Saunders, of London, England. He was exceedingly pleasant regarding the idea. One man felt called upon to sit down on our simple suggestion because, as he put it, it was not backed up by *authority*, just as though one inspired by a noble, helpful purpose must be debarred from the privilege of trying, at least, to be useful. We have often acted on the *good* inspirations that have come to us. Some of them have taken root and bore fruit that has remained. We refer to our individual effort to provide the city of Brooklyn with a local society, and we had the extreme satisfaction of seeing it grow into a decided success, and Brooklyn dentists are reaping a larger benefit, and it could still become a larger and continuing source of elevation to a larger number of practitioners, if they would not forget the assembling of themselves together once a month, instead of once in a year or so. There are active societies doing much good, but they can only be kept alive by men that are alive to the opportunities of doing the greatest amount of good to the greatest number. Nothing can so much create an ambition among practitioners as healthful, fraternal appreciation. The lack of it has done much to lessen the attractiveness of societies. Say what we will, societies wisely managed will do much to neutralize the tendency to "quackery."

Commerce is a mighty power and incentive to progress if unselfishly applied. There was much brought out by the papers at the meeting we have referred to that leads up to the live thoughts we have emphasized. As we have said elsewhere, there is a spirit of *esprit de corps* in our calling, and as it is more and more manifested it will continue to generate the results of better dealing in better things. There is an honest desire to be rid of the evils that exist in the trade journal system. We say they are necessary evils from a business point of view. Profession and strictly business lines *cannot* harmonize. A profession is not in business; we are in charge of a humanitarian practice, and every one that assumes the vocation of a dentist, and does not recognize the fact and morality of his charge, is just so much a charlatan and unworthy of the respect of the needy public; more, they are *brutes*.

The subject of patents was being decried by the authors of papers on that line at this meeting, and as warmly upheld by some of the disputants. Dr. St. John Roosa, the noted aurist of New York, plainly showed that the medical profession had been amply provided with all the facilities up to date in skilful invention absolutely outside of any patent protection. What they have done, why can it not be done by our calling? *Money! money!* is the cry; but a man's riches do not consist in the money that he possesses. Really, the true reward comes from the knowledge that one has benefited one of his fellow-men. But again, we are aware that but few are imbued with the giving spirit. "My family must live" is the echo, and yet there are those who will forget themselves in the interest of others. We were saying lately that we were in the commercial age to a fellow-practitioner. "Yes," he replied, "but we had a demonstration of what it can do at the Philippine Islands. Money furnishes the sinews of war. Yes, that is another side. Life has its part and pull, and that is what keeps us in an equilibrium."

We are disposed to emphasize the fact that so good and manifest atmosphere prevailed at this late meeting. If there were any ruffled disposition we failed to notice it. We are so much interested in dentists as dentists, we do not take on their differences. While there has come a decided separation in the ranks of Greater New York dentists, yet we are hoping that in the existence of two societies in New York proper, there will be a disposition ultimately to more and more fraternize on general principles of interests.

We have learned with regret that Dr. John Farrar is anything but a well man. He has so assiduously devoted himself to his large and lucrative practice, and his devotion to the publication of his marvellous literary productions, that his health has given way, many fear disastrously. Yet, we trust not. Another of our valuable practitioners, greatly beyond the ordinary, has had a severe drop in the physical scale. We refer to Dr. Kingsley, so widely known. He and Dr. Farrar have gone on side by side in the same line, so far as correcting the irregularities of teeth are concerned, and still their methods are quite dissimilar. While Dr. Kingsley has moved out into a field of correcting the deformities of the facial expressions; while he has so skilfully pioneered in this field, he has now an honorable and skilful competitor in Dr. Core, of Chicago, who has pushed decidedly to the front; and yet, as Mr. Webster said, the majestic lawyer of America in his day. "There is plenty of room upstairs."

Speaking of special departments of work in our line, with Dr. A. H. Brockway, of Brooklyn (who got by my side at the elaborate dinner between the sessions of the meeting of the. New York Institute of Stomatology), he said: "I have sometimes thought I might do much more good should I make a specialty of treating pulpless teeth. I seem to be so successful in this line, compared with so much that I hear adversely." Specialized fields of practice are *sure* to come. They are increasing. We know of a young practitioner lately from the Pacific Coast, who is gathering material for publication—an outcome of *demonstrated* practice—which is to be illustrated by photographic skill. It will show the *before* and its *after*, which can only tell its own story. Such methods of presenting practice will put all dissension aside. *What can you demonstrate?* is the demand.

G. ALDEN MILLS.

P.S. Dear Dr.—I forgot to make mention of the interest I have taken in Dr. Henry North's book lately published here on "Riggs' Disease—Pyorrhœa, *vs.* Idiopathic Alveolitis." I found the book very faulty, and at first I felt disposed to criticise it fiercely, but a better thought prevailed, and I sought out his acquaintance to find out the spirit of the man, and in that I was happily disappointed, and it has resulted in a respectful friendship. He is revising the first volume, and he invited me to give him the chapter on the Riggs history, and position of the Riggs science, treatment, etc., and I have done it, and he gives me credit for it in the revision. He has a second volume nearly ready for publication. Let me say, if you have not read the first volume, or may have done so, you give decided attention to his chapters on "Idiopathic Alveolitis," as he terms it. In these the profession has something to learn that they have not. These chapters have proved a decided aid to the light that was partially clear to my mind before, and together with this I have formulated it into a successful practice, enough so that I feel quite clear that my conclusions are correct, which I trust you will see by my paper ere long. I was sixty-seven years old, June 30, and I truly feel that my usefulness was never so great as now, for what I can do for those that may seek my services, and they command fees far in excess to anything I have ever received. Just this week I have received the largest fee of my forty-six years' practice, and I have *never* received a fee so pleasantly associated with good feeling and *real appreciation.* It makes practice *blessed.*

Yours cordially,

New York. MILLS.

ANNUAL MEETING OF THE SOUTHERN BRANCH OF THE NATIONAL DENTAL ASSOCIATION.

To the Editor of DOMINION DENTAL JOURNAL:

While taking a few weeks' rest it has been convenient for me to be at St. Augustine, Fla., during the meeting of the Southern Branch of the National Dental Association held Feb. 22-24. The attendance, I am told, was not as large as usual, owing to the time of year at which it is held, this being the working season for the profession in the south. It was, however, a convention of strong, brainy, representative men who have the welfare of the profession and interest of the public at heart. Many of them are standard-bearers who are known to us all for what they have said and done. The number of young men present and taking prominent part was very noticeable; many of these are pouring into the science of dentistry their best life blood. These young men are already talking to us through the professional press. Several of the colleges were represented by one or more professors.

Much time was necessarily consumed by the revision of the constitution and reorganization, this being the first meeting since the union of the "Southern" and "American," but the business was disposed of in the most business-like and dignified way by the President, Dr. E. P. Beadle, of Danville, Va. The address of the President was a thoughtful presentation of facts and suggestions for the future. It elicited a great deal of well-timed discussion.

There were about twenty papers read, and they were all modern, up-to-date and full of good things, many of them well sustained by models and illustrations. Without making comparison of their relative value, it might be well to mention a few papers and thereby draw the attention of the profession in Canada to these as they may appear in the journals.

Dr. A. L. Fort, of Atlanta, gave a paper entitled "Asepsis," which was illustrated by cultures in ager-ager and bouillon, from operating instruments which had not been properly cleansed. It was an object lesson of terrible meaning.

Dr. T. P. Hinman, of Atlanta, lectured on and exhibited the Rœntgen rays, showing the use of the instrument in dentistry. (Dr. Hinman is an Ontario boy, who promises to be a credit to the old sod.) He also presented some very beautiful X-ray photographs of his own production.

Dr. Weld, of New York, read a paper, which was illustrated by stereopticon views, on the treatment and filling of small and tortuous nerve canals by a chemico-metallic process. It was most interesting and bristled with suggestions.

Dr. H. H. Johnson, Macon, Ga., read a very able paper on Reflex Nervous Action, especially referring to the relation of diseases of the teeth to insanity, and urged the appointment of dental surgeons to Government hospitals for the insane.

The clinics performed on patients were interesting and profitable. A number of useful appliances were shown, and several "best" ways to make crowns and bridges. The discussions were well sustained and brought out much food for thought. It is a regret that I did not think of a communication to the DOMINION DENTAL JOURNAL until after the close of the meeting, and I here and now apologize to the authors of the papers mentioned if the titles are not given just correctly.

The last session was held on Thursday evening, Feb. 24th. The election of officers resulted as follows: President, Dr. W. E. Walker, New Orleans; 1st Vice-President, Dr. T. P. Hinman, Atlanta; 2nd Vice-President, Dr. H. H. Johnson, Macon, Ga.; 3rd Vice-President, Dr. Adair, Gainsville, Ga.; Rec. Sec., Dr. W. S. Foster, Atlanta; Cor. Sec., Dr. C. L. Alexander, Charlotte, S. C.; Treasurer, B. D. Brabson, Knoxville Tenn.

The hospitality of the Southern people is proverbial, but to experience the thrill of its worth a journey.

For six weeks your correspondent has been almost overcome by the exceeding kindness of this people, but all unexpectedly the crowning evidence came to me when by unanimous vote I was made an honorary member of the Southern Branch, also of the National Dental Association of America. However unworthy may be the recipient of the honor, Canada and Nova Scotia is distinguished by having the first honorary member ever elected to either of these societies.

On Friday, 25th, the dentists of St. Augustine invited the Association to a sail in the beautiful harbor and out to sea, which was most enjoyable to all but a few who suffered slightly from *mal de mer.*

St. Augustine is a wilderness of subtropical, almost oriental beauty, a very fairyland of flowers. No wonder with such a climate and such magnificent hotels, the health-seeker and pleasure-seeker crowd it in the winter months. Yet, O Canada! "with all thy faults (of winter climate) I love thee still."

FRANK WOODBURY, D.D.S., Halifax, N.S.

St. Augustine, Fla., Feb. 26th, 1898.

PAINLESSLY DESTROYING PULPS WITHOUT THE USE OF ARSENIC.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—I have been requested to write you regarding the method I employ to devitalize exposed pulps. The method is exceedingly simple and very effective. It is not original at least as I now practise it. Formerly I used the method to do away with the pain which still remained in the small particles of the pulp which were left in the roots, the greater part of the pulp having been devitalized by arsenic. However, as a method has been lately discovered to devitalize the pulp as easily as I did the remaining particles, I resolved to try my method on the pulp, and it worked like a charm. Here it is: Dry the cavity out after having removed as much of the debris as practicable without giving a great deal of pain; then take a piece of *soft* spunk, dip it it in alcohol (absolute alcohol is the best) and then dip the alcohol laden spunk in crystals of muriate of cocaine, place X in the bottom of the cavity and press a piece of unvulcanized rubber against it quite hard for from one to three minutes, then take out and remove the remaining lairs of decay till you thoroughly expose the pulp and repeat the operation when you will find the pulp has lost all sense of feeling and you can remove it without the slightest pain.

Be careful to remove all the pulp before filling as sensitiveness does not return for from ten to fifteen minutes.

Yours truly,

A. J. McDONAGH, L.D.S.

Toronto, Ont.

QUACKS AND QUACK ADVERTISING.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—I'm sorry you abandoned your exposures of quack advertising, because things are getting worse instead of better. The JOURNAL did good service to the profession in this way as well as in other ways, and deserved strong support.

R. T. L.

[Sorry for you.—ED. D. D. J.]

Question Drawer.

Edited by Dr. R. E. Sparks, M.D., D.D.S., L.D.S., Kingston, Ont.

Q.—38. May abnormal conditions of the eye result from dental practice?

A.—1. Yes. L.D.S.

2. Yes. W. B.

3. Yes, eye-strain. J. E. Overholt.

4. Yes, astigmatism and derangement of the occular balance very frequently. A. A. Smith, Cornwall.

5. No, certainly not, if the eyes are normal to begin with and proper light is maintained. But if any pathological condition exists it may readily become aggravated or lead to the development of a more serious trouble simply as a result of the continued close work. Dr. J. C. Connell, Kingston, Ont.

Prof. Eye, Ear and Throat, Med. Dept. Queen's Univ.

Q.—39. Does an operator use both eyes at once? If not, which one?

A.—1. Yes, if he has two good ones. If one is crossed he does not use it. But one cannot measure distance properly with one eye, as may be easily proved by trying to pick up a pin with with one eye closed. The field of vision of both eyes is not the same when working at the chair, owing to the oblique position of the head. A. A. Smith, Cornwall, Ont.

2. If there is no astigmatism. Yes, that depends upon which eye is affected and whether far or near sighted astigmatism.
J. E. Overholt, Hamilton, Ont.

3. Both eyes. W. B.

4. In operating on the posterior teeth, as a rule one eye is used at a time; first the one and then the other, just as the possibility of keeping the head out of the light, or occupying a more seemly position to the patient may require. The longer the sight the more frequently are both eyes used at once. When the operation is on the anterior and more accessible teeth, both eyes are more frequently used. Opinion.

5. It is taken for granted that the refraction of the operator's eyes is normal. If it is not so he should have the best possible advice in order to work under the most favorable conditions to

preserve his vision. Whether an operator uses both eyes depends upon the distance at which he is accustomed to work. If this is at or beyond the nearest point for convergence and accommodation he uses both eyes. If within the near point, then he uses but one eye. The position of the nearer point varies according to the age and the refraction of the operator. No absolute rule can be laid down, as I am not aware that operators are taught to work at a fixed distance. When one eye is used it is likely to be that one corresponding to the side of the patient on which the operator stands. That is, the operator being on the right side of the patient and more or less facing him, he is certain to use the right eye—provided always that both eyes are normal. If he works on the left side then his left eye will come into use.

DR. J. C. CONNELL, Kingston, Ont.
Prof. Eye, Ear and Throat, Med. Dept. Queen's Univ.

Q.—40. Is any ill effect likely to result from operating with artificial light, as electric, etc.?

A.—1. Intemperate use of the eye is sure to result in injury. If the light be insufficient, too strong, or the strain continued, the penalty must be paid sooner or later. EXPERIENCE.

2. Have never experienced any. I use both electric and gas.
J. E. OVERHOLT, Hamilton, Ont.

3. I should think overstrain. A. A. SMITH, Cornwall, Ont.

4. Good artificial light can produce no ill effect. If harm come to the eyes it will be because the light is poor, unsteady or insufficient. Just as much harm will result from insufficient daylight as from poor artificial light. The best artificial light is that which most nearly approaches daylight, and at present this is the incandescent gas light (Aüer or Welsbach). This gives a very steady white light which is much superior to the ordinary gas or the incandescent electric light. The harm to the eyes from working with an insufficient light is produced by the strain of looking at an indistinct image. Any dentist who has to work much by artificial light should learn the use of the forehead mirror to reflect the light from its source to the mouth. This not only intensifies the light but puts the eye in the best possible position for seeing the illuminated area. The lesson for the dentist is this. Be sure of the condition of your eyes. Have any error of refraction, no matter how slight, properly corrected; and if any muscular or organic lesion exists, secure the best advice as to the extent and manner in which the eyes may be used.

DR. J. C. CONNELL, Kingston, Ont.
Prof. Eye, Ear and Throat, Med. Dept. Queen's Univ.

Proceedings of Dental Societies.

NEW DENTAL SURGEONS.—RESULTS IN THE EXAMINATIONS FOR THE DEGREE OF D.D.S.

The Senate of Toronto University at their recent session discussed among other matters the question of increasing the fees for the college and library, exclusive of those for examinations, from $10 to $14. There was considerable opposition to the proposal, and a number of the members of the Senate desired more time to consider it. Finally the matter was postponed for further consideration until next meeting.

The following, which is the class list of the candidates for the degree of D D.S., was also handed out :—

Class I.—G. A. Beattie, W. Buchanan, W. H. Bulmer, C. W. Currie, A. R. Donaldson, W. J. Hill, G. A. Macoun, S. M. Milne, S. P. Reynolds, A. Scott, A. H. R. Watson, W. J. Williams.

Class II.—H. J. M. Bannerman, J. W. Barker, A. C. Burnett, J. S. P. Coghlan, C. A. Cooke, R. F. Edmonds, R. R. Elliott, J. B. Gerry, F. W. Glasgow, G. Grant, J. W. Hagey, R. R. Harvie, A. E. Hunt, J. Hutchison, G. G. Jordan, W. H. Liddie, S. R. Martin, F. D. McGratten, W. G. L. Spaulding, W. D. Staples, J. E. Taggert, W. F. Taylor, O. A. Winter, W. H. Woodrow.

Class III.—A. A. Babcock, D. H. Beaton, M. J. Clarke, A. H. Day, R. F. Denike, J. A. Hilliard, H. Jackson, T. R. Paterson, J. Scott, F. A. Sellery.

Supplementals—J. R. Berry and J. A. Charbonneau must pass examinations in chemistry ; H. M. Kalbfleisch and T. W. F. Stoddart must pass examinations in physiology ; J. A. Locheed must pass an examination in anatomy.

Partial examinations—The following passed in both Anatomy and Chemistry :—E. C. Abbott, F. A. Ballachy, L. A. Barrett, M. Bowles, A. J. Broughton, J. V. Budge, A. G. Campbell, C. H. R. Clark, H. A. Clark, R. H. Cowen, O. I. Cunningham, T. A. Currie, W. N. Cuthbert, E. M. Doyle, J. C. R. Fitzgerald, L. L. Follock, G. Frizell, E. L. Gausby, S. B. Gray, G. W. Grieve, W. T. Hackett, J. J. Hart, G. E. Holmes, W. J. Leary, R. Lederman, C. C. Lumley, N. Millar, R. J. Morton, E. E. Murray, A. W. McGregor, J. I. McMillan, J. F. O'Flynn, G. L. Palmer, J. M. Palmer, L. F. Perkin, A. R. Robertson, D. D. Ross, R. R. Ross, J. N. Shearer, M. O. Sipes, C. A. Snell, J. S. Somers, R. A. Sykes, F. R. Watson, W. T. Willard, J. C. Wray, E. I. Zinkan.

The following passed in Chemistry :—J. W. Armstrong, H. O. Crane, W. A. Maclaren, C. P. Moore, W. J. Schmidt, W. Secombe.

The following passed in Anatomy:—W. H. Bowles, E. H. Henderson, A. Milburn, T. W. Murray, J. L. McLean, R. I. D. Quay.

DENTAL ASSOCIATION (PROVINCE QUEBEC) BOARD OF EXAMINERS.

SUCCESSFUL CANDIDATES FOR MATRICULATION, PRIMARY AND FINAL EXAMINATIONS.

The regular annual examinations of the Board of Examiners of the Dental Association of the Province of Quebec were held last May. The examinations in practical, operative and technical work were held in the Dental College and the written and oral examinations were held in Bishop's Medical College, Ontario Street, commencing on April 6th and continued for four days.

In the matriculation examinations Dr. H. Aspinall Howe and the Rev. Abbe Verreax were the examiners. There were thirty candidates for admission to study. The following received the Matriculation diploma: Fred H. Baxter, Ralph H. Somers, George S. Cameron, Wm. D. Smith, Napoleon Desjardins, Edward Stuart; Thos. W. O'Connell, Jean C. St. Pierre, Andrew D. Angus.

The following are the results of the primary examinations: Anatomy, Dr. H. E. Casgrain, Examiner. First-class honors, J. J. Porter. Passed, Mrs. E. Casgrain, Achille Forest, C. C. Cotton, A. D. Gareau. Chemistry, Dr. J. Nolin, Examiner. First-class honors, Walter Elliott; second-class honors, J. J. Porter. Passed, Mrs. E. Casgrain, C. C. Cotton, A. Forest. Physiology, Dr. F. A. Stevenson, Examiner. First-class honors, J. J. Porter. Passed, Carl C. Cotton, Mrs. E. Casgrain. Metallurgy, Dr. F. A. Stevenson, Examiner. Second-class honors, J. J. Porter. Passed, Mrs. E. Casgrain, Carl C. Cotton.

The following were granted the diploma of Licentiate of Dental Surgery: W. J. G. Boultenhouse, W. J. Kennedy, Horace Lemieux, E. E. Kent, Carl C. Cotton, L. M. P. Yoon, R. A. Brault, Mrs. E. Casgrain, and H. Lanthier, who will receive his diploma when he is of age.

Thos. D. McGregor, Chris. F. Nichol received the D.D.S. degree and were granted the diploma of Licentiate of Dental Surgery.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

ELECTION OF BOARD.—The nominations will take place in November, and the election on the 14th of December. Licentiates should pay their dues.

QUEBEC PROVINCE.

The next regular meeting for the election of a new Board of Examiners for the Province of Quebec, will be held in Montreal on Wednesday morning the 14th of September next. There is not a single licentiate in the Province who is not personally interested in this particular meeting, more so than any that has occurred for many years. Those in arrears must pay on or before the day of meeting. It should not be forgotten that the annual dues are collectible by law, whether or not members attend the meetings. Dr. F. A. Stevenson, Peel Street, is Treasurer. We look forward to a specially interesting and important gathering, to consider serious matters concerning the present and future welfare of the profession, French and English, in Quebec.

NOVA SCOTIA AND NEW BRUNSWICK JOINT CONVENTION.

The joint convention of the New Brunswick and Nova Scotia Dental Association will be held on Thursday and Friday, September 1st and 2nd, at Digby, Nova Scotia.

An excellent programme consisting of interesting and instructive clinics, papers, etc., will be presented. An excursion over the beautiful harbor to the historical town of Annapolis Royal, is contemplated, as well as other interesting features to make our meeting thoroughly enjoyable. A cordial invitation is extended to all dentists to attend our meeting. GEO. K. THOMPSON, D.D.S.,

Halifax, N.S. *Chairman Executive.*

THE MARITIME DENTAL ASSOCIATIONS.

The above Associations will hold a joint meeting at Digby, N.S., on Sept. 1st and 2nd. Papers by representatives for the Provinces will be read. Clinics, etc., will occupy a large part of the time. An evening session will be specially devoted to the exhibitors of the different depots present. The programme has all the appearance of being attractive and varied. An excursion on the harbor to Annapolis Royal, and an exploration of the Old Fort and other places of interest will take place.

EASTERN ONTARIO DENTAL ASSOCIATION.

We received a notice of the meeting held at Brockville on the 14th and 15th July too late for insertion in the July number. These notices ought to be sent to the JOURNAL at least two months previous to date of meeting. The proceedings will appear in a later issue.

Medical Department.

Edited by A. H. BEERS, M.D., C.M., D.D.S, L.D.S., Cookshire, Que.

ANOMALIES OF DENTITION.*

By H. H. OLDRIGHT, M.D., Toronto.

Anomalies of dentition, other than cases of dentigenous cysts, which may be found in various parts of the body, notably in the ovaries, may be classed according to the time of development and with reference to their situation and size.

I. *Late Development.*—Flint (Wm. Henry) says that:—In the different diatheses, struma, syphilis and rachitis the deciduous teeth may not erupt till a late period, as in a case cited by Steiner, 1885, where the teeth were not cut till the fourth year.

We may even have, as Charles Sarazin reports, complete absence of both sets from want of development of the dental follicles or disease of the aveolar process.

There may be symmetrical absence of certain teeth, the incisors, canines and wisdom teeth.

The first set may be perfect, the permanent set imperfect.

Supernumerary teeth may be present from the development of an extra follicle, or the segmentation of a follicle.

II. *Early Development.*—It is said that Louis XIV. and Mirabeau were each born with a complete set cut. In these cases the roots are, as a rule, rudimentary, and either fall out or decay early.

Albrecht has reported cases where the canines and molars being erupted at birth were retained for thirty years and upward. Here there would probably be non-development of the second dental follicles.

He explains the occurrence of a supposed third set by the fact that a tooth may be retained till old age and then appear from atrophy of the jaws.

Abnormal position.—This may be due to development of dental follicles in an abnormal position, *e. g.*, in the ramus or condyle of the lower jaw, the middle of the hard palate or nasal fossal; or *obstruction* due to milk teeth being too firmly set or the cavity ossifying over the second tooth after removal of the first. Obstruction may also be caused by narrowness or shortness of the aveolar margin or abnormal direction of the whole alveolar process, the normal direction being either vertical or inclining slightly inwards, the upper set overlapping those of the under jaw. The narrowing of the margin may be caused in rickety children by the pressure between the labial muscles and the tongue.

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*Read before Toronto Pathological Society, March 25, 1898.

Anomalies in size may occur, the single teeth may be overdeveloped, or three of them may have a continuous outer coating of cement and enamel (seen chiefly in the incisors).

The case which I will record to-night belongs to the class with early eruption. Dr. J. W. Ballantyne, of Edinburgh, in a paper read before the Edinburgh Obstetrical Society in March, 1896, on "Congenital Teeth, with three illustrated cases," deals very thoroughly with these anomalies. In the first described by Dr. A. M. Vargas, of the University of Barcelona, there was an elevated outgrowth from the margin of the lower jaw, which before operation was thought to be a congenital neoplasm, but, being cut into, it proved to be a premature tooth enclosed in an extra alveolar sac.

It was covered with mucous membrane and an inner layer of very vascular connective tissue and was movable at the base. There was no root.

In the second case occurring in his own practice, two bright white, thin, slightly-movable teeth (lower central incisors) were present at birth, which the mother said were absorbed, but which Dr. Ballantyne thinks probably dropped out. There was a tubercular family history. They were replaced at seven months by two new teeth.

The third case is described by Dr. R. C. Buist:

The two lower central incisors at birth projected above the gum, the right two mms., the left less. They were movable backward and forward. The gum at the roots was swollen and everted before and behind, this becoming less in a few days when the teeth were more firmly held. They both came out during the first month and it was stated that they felt like gristle. They have not been replaced. Dentition was otherwise normal.

I might now describe the case which occurred in my practice a year ago, the two lower central incisors being present at birth. When two days old the boy wounded his mother's nipple, an abscess resulting in spite of antiseptic treatment and the use of a shield.

Strumpbell advises removal if the teeth are loose. In this case the teeth were not drawn for certain reasons. They were set in a movable, hinge-like process of the alveolus raised above the level of the gum about one-third of an inch. Below the hinge and at the symphisis there was an exostosis, which has since disappeared.

A few days after birth the child developed a pempigous eruption and at six weeks snuffles and a papular syphilide.

The father had contracted syphilis twelve years before and had been under treatment with iodides and mercury for two years at that time. The first child, born ten years ago, died from congenital syphilis and there have been none since.

To return, in the meantime the teeth had become firmly set, and the hinge had lost both its elevation and mobility. Shortly afterward the crowns softened, losing their lime salts and leaving the pulp cavities exposed as they are at present level with the gum. We will probably scoop out and fill with gutta percha or cement. No other teeth have since arrived. I sent an acconnt of this case to Dr. Ballantyne, whose reply was most courteous and was as follows:

DEAR DR. OLDRIGHT,—The editor of *The Edinburgh Medical Journal* sent on to me your record of an interesting case of congenital teeth. Allow me to thank you for this record which contains several new features. I find the after history of these teeth when they are not removed at once is rather obscure. In some cases they are certainly replaced by milk teeth and are then really supernumerary as well as previous, but in other cases they seem to be the only milk teeth which the infant has. The exostosis is interesting, but its meaning is far from clear. Since I wrote my paper I have had several records sent me, and two of these I have embodied in an article on "Congenital Teeth" in the forthcoming supplementary volume of "Keating's Cyclopædia of Diseases of Children." In one of these the child presented by the face, and the teeth were diagnosed before delivery—a truly unique circumstance, I suppose. I send you a reprint of my paper, also one of another curious case of abnormal dental development. I am specially interested in all congenital anomalies and shall always be glad to hear from you regarding such. The syphilis may have had to do with the early decay of the congenital teeth in your little patient, but I scarcely think it could be regarded as the cause.

Believe me, yours faithfully,

J. W. BALLANTYNE.

24 Melville street, Edinburgh, Feb. 7th, 1898.

Dr. Ballantyne very kindly sent me his monograph from which I will quote his conclusions:

(1) Congenital teeth form a rare anomaly, but one which has long been known both to the profession and to the public.

(2) Their presence has often an ill effect upon lactation, partly on account of imperfect closure of the infant's mouth and partly by injury to the mother's nipple; sublingual ulceration may also result, and infantile diarrhœa and atrophy are more distant consequences. Sometimes, however, symptoms are altogether absent.

(3) Congenital teeth have probably little or no prognostic significance as regards the bodily or mental vigor of the infant carrying them.

(4) The teeth usually met with are lower incisors, but sometimes upper incisors may be seen, and very rarely molars of either upper or lower jaw. Other facial or buccal malformations may occasionally be met with.

(5) They are caused by premature occurrence of the processes which normally lead to the cutting of the milk teeth; in a few cases it would seem that the anomaly is due to a true ectopia of the dental follicle and its contained tooth.

(6) In a few cases a hereditary history has been established.

(7) As congenital teeth are usually incomplete and ill-developed, and likely to be more an inconvenience than an advantage to the infant, they are best removed soon after birth, an operation which can be easily, and, except in very rare instances, safely, performed.

(8) The occurrence of premature teeth in certain well-known historical personages is an interesting fact, the importance of which has been much exaggerated.

Under pathogenesis he gives as the predisposing causes:

(1) Ectopia.

(2) Imperfect development of tooth and absence of fang to fix it deeply.

(3) Too early deposit of salts.

(4) Atrophic state of gum.

(5) Intra-follicular inflammation and ulceration of gum.

Under frequency of occurrence, Paris Maternity, out of 17,578 new-born infants, 1858-1868, three had teeth—one in 6,000.

In 20,000 births Blot had not seen an instance.

Besnier and Gueniot regarded them as very common.

The truth lies between the two extremes. In Dr. Ballantyne's paper he has gathered together from literature some seventy cases, and he says that doubtless not a few have escaped notice.

I will give part of the doctor's historical section in which he names the famous personages, Richard III., Louis XIV., Richelieu, Mirabeau, and Mazarin. Shakespeare, in King Richard III., Act II., Sc. 4, makes the Duchess of York say:

> "Marry, they say my uncle grew so fast
> That he could gnaw a crust at two hours old;
> 'Twas full two years ere I could get a tooth."

Also in Act IV., Sc. 4, of the same play Queen Margaret says:

> "That dog that had his teeth before his eyes."

And in King Henry the Sixth, Part III. Act V., Sc. 6, the following words occur:

> "Teeth hadst thou in thy head when thou wast born,
> To signify, thou cam'st to bite the world."

And Richard himself says:

> "For I have often heard my mother say
> I came into the world with my legs forward;
>
> The midwife wondered and the women cried
> O Jesus, bless us, he is born with teeth,
> And so I was; which plainly signified
> That I should snarl, and bite, and play the dog."

ACUTE DILATATION OF THE HEART OCCURRING IN THE COURSE OF CANCRUM ORIS.—In the March number of the *Edinburgh Medical Journal* Dr. Thomas Oliver records the following case: The patient was an apparently healthy girl. Three weeks before her admission to the infirmary, on June 18, 1896, she began to suffer from faceache, which she attributed to a decayed tooth. A day or two subsequently an ulcer formed in the mouth behind the left upper incisor teeth. This was followed by swelling of the cheek and ulceration of its inner surface. The pain continued, and was accompanied by frequent fits of shivering and by a feeling of extreme prostration. When the author first saw her the left cheek was considerably swollen, red, and indurated, and the left half of the upper lip was swollen and protruding. There was a large, brawny swelling below the chin, and the breath was very offensive. The teeth were loose, and the gums were red and ulcerated in places. On the floor of the mouth there was a large ulcer covered with an adherent yellow slough, and there was another on the inside of the cheek opposite the upper canine tooth. This, too, was covered with slough. The heart beat was normal. The temperature on her admission was 102° F. Nourishing liquid foods were prescribed and the mouth was irrigated with Condy's fluid and subsequently with a boric-acid lotion. On the 21st of June the mouth looked healthier, but the patient complained of cough, greater shortness of breath, and pain in the right chest. Friction sounds were detected over the right base and bronchial râles all over the lungs. Although the mouth seemed better, there was still a considerable quantity of purulent discharge, some of which had evidently trickled backward and down the trachea, setting up a septic bronchitis. On the following day the bronchitis was much worse, and the patient seemed very ill; the pulse was 140 a minute and rather irregular. The area of cardiac dulness had increased, the impulse of the heart was flapping and more diffused than before;

the apex beat was felt between the fourth and fifth ribs, half an inch external to the left nipple. The urine was healthy. For some days after the last note was taken, the patient was too ill for any prolonged examination to be made, but it was noticed that the area of cardiac dulness had rapidly extended, that the apex was beating an inch and a half external to the nipple, and that over this area there was heard for the first time a loud blowing systolic murmur. It was clear that the heart had undergone very acute and rapid dilatation. There was slight enlargement of the area of splenic dulness. On examination of the blood, the red discs were observed to be paler than usual—they formed rouleaux; the white corpuscles were increased in number. One cubic millimetre of blood contained 3,300,000 colored discs, there was one white to two hundred and forty red corpuscles, and there were a few poikilocytes and macrocytes. By degrees the patient's health began to improve, and with that the heart began to improve, and with that the heart gradually became reduced in size. On the 6th of July the apex beat of the heart was felt an inch below the left nipple and in a line with it. The mitral systolic murmur was still loud and readily heard. By the 7th the perforation in the cheek had almost closed; the tissues around the opening were softer, much less indurated, and not nearly so painful to the touch. The cough had, practically speaking, disappeared. The pulse was fifty to the minute, full and regular; the mitral murmur remained unaltered. No râles were detected in the lungs. On the following day it was noted that the apex of the heart was felt beating in the fifth interspace, a quarter of an inch internal to the nipple. On the 15th the patient was much improved; the apex beat of the heart was half an inch internal to left nipple. A loud blowing mitral systolic murmur was heard over the apex area, but not at the inferior angle of the left scapula. The second sound heard over the pulmonary artery was accentuated. From this date the patient gradually recovered. Her left upper canine tooth was shed and a sequestrum of bone came away. There was very little deformity, however, although the skin close under the left ala nasi was firmly bound down by tense cicatricial tissue to the bone underneath. The author says that the principal point of interest in the case is the rapidity with which the heart dilated. When the patient came under observation it was noted that her heart was healthy and its area of percussion normal. In the course of the illness the apex of the heart could be seen getting carried out farther and farther daily, and all at once a mitral systolic murmur developed, and the pulse became rapid and irregular. The heart dilated owing to malnutrition of the myocardium, either from fever or from the poisoned blood, and the mitral systolic murmur that developed was adynamic rather than endocarditic. There was no albuminuria and there was nothing of the nature of heightened arterial tension at any time to explain matters. It is no uncommon circumstance, says the author, to find the heart dilate in fever and become a source of great danger. In the foregoing case there was never any great pyrexia, so it is to the action of toxines in the blood that must be attributed the malnutrition and subsequent dilatation of the heart. As the patient improved under treatment, it was interesting to watch the gradual reduction in the size of the organ and the return of the apex beat to within the nipple line. One of the earliest signs that the heart was dilating was the irregularity and rapidity of the pulse. When the patient was examined several months after her recovery, the mitral systolic murmur could still be heard, but she had gained flesh and was enjoying good health.—*New York Medical Journal, March 26, 1898.*

MENTAL PECULIARITIES IN HÆMOPHILIA.—In the interesting case of hæmophilia, described in the *British Medical Journal* of April 2nd (p. 883), by Clinton T. Dent, F.R.S.C., Surgeon to St. George's Hospital, London, passing allusion is made to a point which, though, according to my experience, very common in these patients, has hitherto been little noticed. In the hope of eliciting information on the point, corroborative or other, I venture to trespass on your columns. Patients subject to hæmophilia—bleeders in short, for that term is surely better than "hæmophilics"—constantly exhibit mental peculiarities of definite form. The most important and the most common mental peculiarity is an inability (it is more than an unwillingness) to tell the truth about their condition even when they have had repeated an alarming experience of their defect. Frequently they will persist in obstinate denial of their liability to bleed, even when the hæmorrhage is going on, and resisting all efforts to check it. I well recall a strongly marked instance of this unfortunate and misleading propensity that occurred some years ago in hospital practice. A youth, about 16 years of age, was admitted for persistent hæmorrhage following the extraction of a carious lower molar tooth. Every kind of remedy was tried, but the bleeding, though often checked for the time, broke out again and again. Eventually the inferior dental canal was plugged, but after a while the hæmorrhage recommenced and the boy died. From first to last he denied stoutly that he had ever suffered from bleeding, though the condition of hæmophilia was obvious enough to all. Though sane in all other respects, and aware of his serious condition, he maintained this attitude throughout. We were anxious to communicate with his friends, but he flatly refused to give the address of his relations. Ultimately and by chance the address of his mother was discovered, and she was sent for. There was no need to break the news gently to the woman, for the moment she arrived she said, "I know what has happened; my son has had his tooth taken out, and he is bleeding to death. The same thing almost happened two years ago, and on many occasions his condition has been most serious from slight scratches or wounds." The youth furiously resented his mother's appearance at his bedside, and died actually cursing her, and all who had to do with him, while asserting almost with his last breath the *idée fixe* that he did not bleed more than others. This distressing case, though exceptional in its circumstances, is no isolated experience, and I doubt not many others have met with patients subject to similar delusions. Hæmarthrosis may easily simulate tuberculous disease in appearance, and most surgeons would probably admit—if only to themselves—that once in a way they have at first been deceived by such cases. In these days of early and free operative measures the precaution of ascertaining whether there is any history of hæmophilia should, in the case of joint disorders, be a matter of routine. It is not, as I have shown and always taught, sufficient to rely on the patient's word alone, however categorical and clear his statements may seem to be. The suggestion that bleeders should be tattooed does not seem to be a happy one. Apart from the obvious practical difficulty of gaining consent, the tattoo punctures would be likely to give rise to trouble. If bleeders and epileptic patients could be induced to wear round their necks a small label setting forth their infirmity, they would probably derive advantage. But epileptic patients are far more likely to adopt any such device than bleeders. —*Brit. Med. Jour., April 23, '98.*

CONGENITAL TEETH.—Dr. J. W. Ballantyne gives particulars of three additional cases of this condition: 1. Mother, a multipara, who had nursed six cases of scarlet fever during her pregnancy. The presentation was a face, and the presence of the teeth rendered the diagnosis of this rather difficult. There was a "caul." The teeth were the upper central incisors, one well and the other poorly developed. The boy was now 16 months of age, vigorous, healthy, had eight teeth, including the two above noted, which appeared likely to remain, as they were larger and stronger than the others. The child was reared on the bottle. The combination of face presentation and congenital teeth was rare. The congenital teeth neither dropped out nor required removal, and they were well formed. 2. This case occurred in South Jarra, Melbourne, but full details were wanting. The teeth dropped out, necrosis of the alveolar process followed, and the child died. Whether the death was due to the presence of the teeth or not is uncertain. 3. The father had syphilis twelve years before the birth, and was treated for two years with iodide of potassium. The mother was non-syphilitic. One previous child nine years before, who suffered from eruption and died of marasmus. The weight of the present fœtus was 7 lbs. The teeth were two lower central incisors, movable in their sockets, aud the alveolar process for about three-quarters of an inch was elevated three-eighths of an inch above the level of the gums on either side, and was also movable. Below this hinge process was an exostosis in the middle line of the symphysis menti, which disappeared later. The mobility and elevation disappeared later, and the teeth became fixed. The mother's nipple was wounded before the teeth were discovered, and a mammary abscess resulted. A few days after birth the child developed pemphigus, and when six weeks of age, "snuffles" and a papular eruption appeared. The latter disappeared under the use of mercury. Simultaneously, the teeth became soft and were removed by the finger-nail, but the roots remained. At the age of 11 months, the roots were filled with granulation tissue level with the gum, and no other teeth had appeared. Some of the irregularities here might have been associated with the syphilitic state, but it was possible that the process was an extra-alveolar dental sac, containing two supernumerary as well as congenital teeth.—*Brit. Med. Jour., March 19, '98.*

REMOVAL OF THE INFERIOR DENTAL NERVE THROUGH THE MOUTH.—Dr. Alexander H. Ferguson (*Chicago Medical Recorder*, May) reported to the Chicago Medical Society on April 13th a case of neuralgia in which all of the three branches of the nerve were affected. The tongue and ear were also involved. Medical treatment had proved useless. The inferior dental nerve was then removed in view of the removal of the Gasserian ganglion, a much graver operation. The head was thrown well back, and a gag put in the mouth. The distribution of the inferior dental nerve was then cut at its exist and from the mental foramen, and dissected out at that point and cut as it began to divide in its distribution. A half-inch trephine was then used on the jaw where the two last molar teeth were situated. After the gums had been separated longitudinally and the soft parts pushed to one side, a trephine was applied on the inferior maxilla and the nerve exposed where it travelled through the jaw. An incision was made parallel to the ascending ramus of the jaw and a little to the inner side thereof, cutting through the mucous membrane, and by blunt dissection the nerve was found as it entered the foramen on the inside of the jaw, a good guide being the sharp spiculum situated in that part. After the nerve had been severed at the mental foramen and exposed at its entrance into the inferior maxilla it was extirpated *in toto* by pulling it out from the middle of the jaw, and then hooking it from the upper incision until it hung loose, then following it up as far as possible and cutting it. In this procedure the artery was injured and the wound had to be packed firmly. The packing was left in for three days, then removed. No hæmorrhage followed. The patient was relieved instantly and had remained perfectly free from pain since.—*N. Y. Medical Journal.*

INHALATIONS OF VINEGAR TO CONTROL NAUSEA AND VOMITING AFTER ANESTHESIA.—Dr. J. Torrance Rugh states (*Phil. Polyclin.*, VII, p. 110) that he has very frequently made use of inhalations of vinegar after anesthesia, both in private and in hospital work, and was highly gratified with the results. The method of administration was to saturate a towel or cloth with fresh, strong vinegar (preferably that made from cider), and hold it a few inches above the patient's face, or hang it from the bedstead, so that it will be near his head. It should be used directly after the anesthetic has been discontinued, and kept up continuously for hours. In one case in which ether had been given, nausea began soon, but ceased in about one and a half minutes after using the vinegar. This was then removed, and the nausea returned, but again disappeared after the vinegar was given. The action was so marked that the process was repeated five or six times so as to verify the conclusions, and each time the result was the same as at first noted, the patient quickly becoming quiet as though not going under complete anesthesia. Another patient was given chloroform for the removal of the pharyngeal growths and swallowed considerable blood. Vomiting of the clotted blood occurred, but ceased immediately after, and did not return. These results have been duplicated in about twenty-five other cases, in which the action was almost uniformly beneficial. The relief from thirst to the patient is most marked, and the refreshing effect is both grateful and welcome to the sufferer. Its simplicity and efficiency commend its use to all having to do with such cases. It is also free from any toxic effects and can occasion no harmful conditions.—*American Medico-Surgical Bulletin, May 10, '98.*

THE BLEACHING OF TEETH WITH PYROZONE.—At a meeting of the New York Odontological Society, held on the 19th inst., Professor Edward C. Kirk, of the University of Pennsylvania, gave an interesting address on the bleaching of teeth by means of pyrozone. He pointed out that the pink discoloration was due to the permeation of the tubules by hæmoglobin from disintegrated red blood-corpuscles, while the browner stain was due to the deposit of hæmatin from disintegration of the hæmoglobin. The speaker showed in two tubes the difference between blood which had undergone disintegration and that which had not done so, the former being clearer and more translucent, the latter murky and grumous.

He then painted to a bright red a sheet of white blotting paper with the blood containing free hæmoglobin, and converted a portion of the hæmoglobin into hæmatin by the application of acid, thus turning it brown. The application of pyrozone at once bleached the bright red of the hæmoglobin, but had but little if any effect upon the brown stain of the hæmatin. Professor Kirk went on to state that he had had some success in this latter kind of discoloration by the application of oxalic acid after treatment with the hydrogen dioxide. It would be interesting to know whether similar results would follow the application of hydrogen dioxide and oxalic acid in the discolorations of the skin common in old-standing syphilis, etc.—*N. Y. Med. Journal, April 23, 1898.*

DEATH FROM CUTTING A WISDOM TOOTH.—M. Heydenreich reported to the *Société médicale de Nancy* on February 28th (*Presse médicale*, April 9th) the case of a man, thirty-three years of age, brought to his clinic and said to be suffering from mumps. There was high and persistent fever, rising to 104° F., with agitation, delirium, stiffness of the jaws, and swelling over the right parotid extending into the neck. When M. Heydenreich saw the patient, on the third day of the grave symptoms, the condition seemed to have improved. The temperature was from 102.5° to 100.4°, consciousness had returned, and the swelling was strictly limited to the angle of the right jaw. The patient could open his mouth, and a drop of pus escaped by the jaw. All the teeth were there. It was certainly a case of suppurative osteitis of the inferior maxilla, due to the eruption of a wisdom tooth. There was not at this time any indication calling for operative measures. The next day, however, the patient became semiprostrate, and in the evening the temperature rose to 104.9° F.; on the fifth day he was taken in a moribund condition to the hospital. There was complete left hemiplegia. A free incision was made by means of the thermal cautery as far as the zygoma, but no pus was found. He died next day at midday, the temperature being 98.9° F. The autopsy disclosed pus on the right side between the cranial vault and the meninges up to the level of the convexity, toward the median region, and suppurative osteitis of the cranium. On opening the meninges, a bed of very thick greenish-yellow pus (showing meningo-encephalitis) was laid bare. There was no lesion in the interior of the brain.—*N. Y. Medical Journal, April 30, 1898.*

SOUTH AFRICAN DENTISTS.—A recent number of the *Dentist* contains an amusing account of South African dentists, furnished by "a Birmingham gentleman connected with dentistry," who has practised his profession in various parts of the Dark Continent.

The South African dentist, we learn, has no drawing-room practice, and the cost of appliances is very high. It is cheaper to import them, but the cost of getting them "up country" is great. Yet it is "up country" that the dentist finds not only profit but amusement. The gentleman referred to and his partner made close on £200 in three weeks—not a bad haul (to use his own expression), considering that their work lay chiefly among a class made up largely of a race noted for the fine quality and condition of their dental apparatus. In such practices as these the dentist covers a very large area. Owing to the distance the appointments have to be made two or three months ahead. Thus, if a native goes up with a racking toothache (say) in December, he may, if he is lucky, have an appointment for some time in March. So victims to toothache have to exercise more patience there than civilized man exhibits under the same trying circumstances. The dentist gets an accumulation of practically three months, and makes money and disperses teeth at a rapid rate. He is held in great regard, and, unlike his brethren in Europe, he is looked upon as a kind man. The natives think that to have a tooth drawn in the approved style is almost a pleasure. They have been used to less refined methods.—*British Medical Journal.*

INFLAMMATORY INDURATION OF SALIVARY GLANDS.—Mr. Barling showed a specimen of chronic inflammatory induration of the submaxillary and sublingual salivary glands from the presence of salivary calculus which he had removed from a female aged 39. She first had swelling and pain in the submaxillary region six years previously, at which time a small calculus escaped into the mouth, with relief of symptoms. During the last twelve months the patient had suffered repeated attacks of pain and swelling, and a few weeks ago another small calculus escaped, but with very little relief. When she presented herself both the glands were stonily hard, very fixed and adherent to the floor of the mouth, but owing to the density of the tissues no calculus could be felt. With considerable trouble both glands were excised, the floor of the mouth being freely opened. Examination of the specimen showed simply a dense infiltration of the gland tissue without any appearance of new growth, and a calculus, measuring nearly three-quarters of an inch in length, lay in a dilated duct.—*Brit. Med. Jour.*

THE ACTION OF SALIVA ON BACTERIA.—Triolo (*Rev. d'Igiene e di Med. Prat.*, An. 2, N. 12, Naples) has reinvestigated the above subject by new methods. Having first thoroughly disinfected the mouth with corrosive sublimate 1 in 1,000 or permanganate of potash and then washed out with distilled water until no trace of the germicide could be detected, the saliva was taken fresh from the mouth, and its effect observed on various germ cultures. The result showed that the saliva possessed decided bactericidal properties, killing old cultures (five days) and diminishing the number of recent ones (eighteen hours). Saliva filtered (as in Sanarelli's experiments) has very little germicidal action. Very little difference was observed between parotid and submaxillary saliva as regards their action on germs. Indeed, the author believes that the chief germicidal action of the saliva must be attributed to the secretion of the muciparous glands of the mouth. A short bibliography is given.—*Brit. Med. Journal, Feb. 28th, 1898.*

IN deep anesthesia owing to the relaxation of the muscles that pass between the lower jaw and the hyoid bone, the hyoid bone, the tongue and the epiglottis fall backward until they come in contact with the posterior pharyngeal wall; they remain fixed thus at the end of an expiratory act, entirely preventing the entrance of air at the next inspiration. This is best overcome by placing a pillow under the shoulders and allowing the head to fall back over the end of the table; passing the handle of a spoon between the teeth and pressing it downward and backward on the dorsum of the tongue until it comes in contact with the pharyngeal wall; and then by a simple leverage-action of the wrist, bringing forward the tongue, epiglottis and hyoid bone, thus immediately relieving all obstruction to respiration. This position can be retained during artificial respiration until the patient is restored. This method is also very valuable in resuscitation of the apparently drowned.—*British Medical Journal, April 23, 1898.*

ETIOLOGY OF LARYNGISMUS STRIDULUS.—A. M. Erskine (*Brit. Med. Jour.*, Jan. 15, 1898, p. 145) gives an account of a case of laryngismus in which the etiology was demonstrated to be reflex. The child in question was a strong, healthy, well-nourished girl, presenting no evidence of rickets. At five months she had light attacks of laryngismus which passed off when she had cut her first tooth. Like attacks six weeks later disappeared when another tooth cut through. There were no more till the child was twelve months old; they were then renewed with increased severity. The physician rubbed his finger along the child's gums, and immediately produced a typical attack with carpopedal contractions. The swollen gums were lanced for three new teeth, and no more attacks followed.—*American Medico-Surgical Bulletin, May 10, '98.*

THE USE OF VINEGAR FOR THE VOMITING PRODUCED BY CHLOROFORM.—*La Médecine Moderne* quotes the observation of Lewin that out of 174 cases of vomiting following the administration of chloroform he was able to relieve 125 patients by causing them to inhale the fumes of vinegar, the vinegar having previously been placed upon a towel. The method consists in placing a small piece of linen which has been wet with vinegar over the face of the patient for a number of hours, after the chloroform mask has been removed. If the vomiting returns after this treatment is stopped a renewal of it will be sufficient to check the relapse. Lewin believes that in the elimination of chloroform from the lung it is decomposed into hydrochloric acid and chlorine and that these irritating substances are responsible for the attack of vomiting, and that the inhalation of the vapor of the vinegar produces trichloracetic acid, which does not produce vomiting.—*Therapeutic Gazette, March 15, '98*

ŒSOPHAGOTOMY AND REMOVAL OF DENTAL PLATE WITH UPPER CENTRAL INCISOR TEETH.—A. A. Snyder (*New York Med. Jour.*, Sept., 1897) gives the history of the case. A woman, aged 22 years, had swallowed a broken dental plate. It lodged in the œsophagus. The voice became affected, and she complained of pain on the left side of the sternoclavicular joint. Owing to irritability of the parts, even under cocaine, removal by the natural passage was impossible. On the third day, having localized the foreign body, a two-inch incision was made along inner edge of sterno-mastoid muscle. The jugular vein and common carotid were exposed, and the œsophagus being entered through the wound, the plate was extracted. The size was one and a half inches by one and a quarter. The patient made an excellent recovery. In this case the X rays were tried but failed to locate the foreign body.—*Canadian Practitioner, May, '98.*

A CURIOUS case of auto-suggestion has just occurred in Berlin A domestic servant, a strong and healthy girl, aged 25, came into hospital complaining of agonizing pain in the chest and dyspnœa. She thought she must have swallowed her artificial teeth in her sleep, as she had not been able to find them on awakening, and had had terrible pain ever since. A careful examination was made, but failed to reveal any trace of the tooth-plate. As, however, the girl's sufferings showed no signs of abatement, she was kept in the hospital and put to bed. Next morning a fellow servant of the girl presented herself to the matron, bringing the supposed *corpus dilicti*—a plate with nine teeth—in her hand. It had been found under the mattress. The sufferer saw her teeth, and in the same moment all her pain was gone, her asthma disappeared instantaneously, and she left the hospital and returned to work as well and strong as ever.—*Brit. Med. Jour., April 23, '98.*

SEPTICÆMIA FROM A CHILD'S BITE.—While recently performing an intubation upon a child suffering from membranous croup Dr. Dowling W. Benjamin, of Camden, New Jersey, was unfortunate enough to have his finger caught between the child's teeth, causing a painful lacerated wound from which septicæmia followed. The wound was subsequently opened and cauterized, and at last accounts the doctor was reported as being out of danger.—*New York Medical Journal, April 2, '98*

EXALGINE IN DENTAL NEURALGIA.—Dr. F. C. Caley, of New Castle, reports the cure in a few minutes of severe dental neuralgia by means of a single dose of two grains of exalgine in an alcoholic solution. A drachm of rectified alcohol will dissolve twenty grains of exalgine, which latter is not precipitated by the addition of a small quantity of water.—*Clinique* (*Montreal*), *April.*

A GOOD MOUTH WASH IN FEVERS.—Glycerine, lemon juice, rose water, and chlorate of potash solution—in equal proportions. —*The Hospital Nursing Mirror.*

Reviews.

A GREAT WORK.

A Treatise on Irregularities of the Teeth and their Correction ; including with the author's practice other current methods. Designed for practitioners and students. Illustrated with nearly 2,000 engravings (not embracing the classification of mechanism in third volume). By JOHN NUTTING FARRAR, M.D., D.D.S., Esq. Vol. II. The International News Company: London, New York, Leipsic. 1888-97.

This magnificent single volume of 1571 pages is a monument to the patient industry of the author and the splendid progress of the profession. Dr. Farrar evidently started to exhaust the subject, and has succeeded so well that whatever is known on this fascinating branch may be said to be comprised within his pages. Of the making of books there is no end; but there has been so little new of a definitely practical nature given to our literature within the last ten years, these volumes should find an unoccupied niche in every dental library. The leaders of the profession in the United States have unanimously given the work unstinted praise, and we do not hesitate to say that any one who pretends to do the best that can be done for his patients in the direction of regulating teeth, must be handicapped unless he has made a special study of the many valuable, practical hints supplied in this great work. The table of contents alone comprises twenty-six carefully arranged pages; that of the list of illustrations, twenty-one pages; that of the index, sixty-two pages. There is no work in our literature which at all attempts to compete with the excellence of this arrangement. It immensely facilitates immediate reference, and places the reader under special obligations to the author. We cannot speak too highly of this work. It was no perfunctory task, and one feels as if he had before him not only invaluable personal experience, but the sacrifice of the author's time, money and health. If there were any honors of distinction to be given in the dental profession in the United States, and indeed in the world of dentistry, no man has more fairly earned them than Dr. Farrar. We shall place this volume permanently beside its predecessor in the library of the Royal College of Dental Surgeons of Ontario, where we trust its intrinsic value will induce many who examine it to purchase it.

The author of such a work is apt to be the victim of much thoughtless correspondence, and we venture to suggest that the books be ordered through any bookseller or any dental depot advertising in this journal. The Toronto News Company, 42 Yonge Street, and the Montreal News Company, 386 St. James Street W., also supply it. The price of each volume in full cloth, gilt back, top, and an outline medallion on sides, is $6.00; in cloth sides, morocco back, (gilt do.), $7.00; in half morocco (gilt do.), $8.00: in sheep, $8.00.

Mechanical Practice in Dentistry. By WM. BOOTH PEARSALL, F.C.S., Ireland, etc., honorary member of the Royal Hibernian Academy of Painting, Sculpture and Architecture. With a large number of illustrations, designed by the author and drawn by I. M. Kavanagh, R.H.A., and Chas. Russell, R.H.A., and many other engravings from new and original sources. London: Claudius Ash & Sons, 5, 6, 7, 8, and 9 Broad Street, Golden Square W., and New York: 30 East 14th Street. 1898.

This is the first book of the kind ever written in Ireland, and it is one of the few best of its kind in the world. The last book on dentistry which Ireland produced was that of Robert Blake, in 1801, and there has certainly nothing been issued at any time from the Three Kingdoms on the subject which, in the slightest degree, can pretend to equality. Those who know Mr. Pearsall's artistic and mechanical skill would expect from his pen and pencil exactly what they can now obtain. It is a work that may stand in a fraternal, professional alliance with that of Dr. Essig's, and yet it has unique features which no other book of the kind contains. It is absolutely free from plagiarism, written in a lucid and practical style, easy to read and understand, but no doubt hard to write.

The laboratory is frequently a place for which the dentist has to apologize. In spite of the improved apparatus, etc., provided by our enterprising manufacturers, too many dentists are content to make it a sort of a dungeon, where they are "cabined, cribbed, confined," out of sight of their patients. Mr. Pearsall's ideas throw a flood of sunshine and suggestion into this dinginess, which not only lightens labor, but transforms the room into a cosy retreat. The chapters on the construction and equipment of the work-room reveal an attractive originality which, with their plain illustrations, ought to be a joy and delight to anyone re-fitting the laboratory. The illustrated plans of work-rooms and work benches are practically of much value. There are plans of fifteen different work-rooms, and a large number of other illustrations, making in all throughout the book one hundred and sixty-eight, mostly original. The author has wisely given an appendix containing classified lists of tools suitable for use at the various benches in the work-room, and has therein arranged the illustrations properly placed in catalogues, but which when found in the body of a text-book are a disfigurement. A beautiful portrait of George Washington is used to show how a handsome face was disfigured by a dentist in the insertion of a badly-constructed artificial set.

Perhaps we who are devoted, by reason of success, to adhesion and atmospheric pressure, have something to learn from the favor with which the author writes of the use of spiral springs. Mr. Pearsall's experience is not to be flippantly criticised, and yet there is probably not a dentist in Canada or the United States who has made use of spiral springs for the purpose of retaining sets of teeth for the last forty years.

The chapter on continuous gum work brings back to some of us the pleasant recollection of student days before vulcanite was introduced. The chapter on fixed bridge work treats the subject in a practical, common-sense manner, which is by no means complimentary to the noisy crown-and-bridge advertisers, who, in the daily press, deceive their victims. One of the personally interesting features is the attention paid by the author to the invention and skill of Mr. I. H Garbrelly, of Penzance, England, a former student of Dr. John Leggo, of Ottawa, and an L.D.S. *sine curriculo* of the Royal College of Dental Surgeons of Ontario. His methods of removable bridge work are profusely illustrated and commended. Experience has long ago shown the folly of much of the crown-and-bridge work of the present day, and the superiority in the make of removal plates. Canadian, as well as American, dentists are inserting the most hideously ugly and unnatural advertisements of the degeneracy of practical taste and skill. We do not care who the dentist may be, he is lacking in professional and personal æsthetics who inserts conspicuous all-gold crowns; while not a few lack in judgment and honesty who insert much of the modern fixed bridge work.

We had the pleasure of meeting the author of this work at the British Dental Association gathering in Dublin, in 1888, and discovering for ourselves that to his minute attention to detail and the deep interest he took was due the memorable success of the dental museums. His collaborator, Dr. Theo. Stack, shared in the work and the appreciation, and the members who came from England and Scotland to the Emerald Isle were immensely taken by surprise. Altogether we have the greatest confidence in recommending our readers in Canada and the United States to possess this work. If it had no other attraction than that of being the product of many years of theoretical and practical study in a direction which is, to the author, a labor of love, it would be worthy a prominent place in our libraries.

Dental Pathology a Dental Medicine. By GEO. W. WARREN, A.M., D.D.S. Third edition, illustrated. Philadelphia: P. Blackiston, Son & Co., 1012 Walnut Street. 1898. Pp. 176, 80 cents.

This is No. 13 of the "Quiz Compends" which the Blackistons have made so popular. It is a valuable aid to the student at college as well as to the larger number of practitioners in Canada who should continue to be students in their offices. It can be obtained through any Canadian bookseller.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

ASSOCIATE EDITORS:
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EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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WHAT HAS CANADA DONE?

What has Canada done to encourage a home dental journal? We need not discuss the importance of its existence. It is the only medium of full and open communication between members of the Canadian profession, and the only local representative of the Associations in the Provinces. Its columns contain, with few exceptions, whatever contributions Canadian dentists make to the literature of dentistry. It is not a trade journal in any sense. It is not monopolized by its publisher to boom any one depot more than another. It is independent of any organization, and the publisher gives the editor a free hand in dealing with whatever questions he chooses to discuss. It is neither omnipotent nor infallible. It has its faults, and makes mistakes, but none of them are wilful or malicious.

Every single number costs the publisher more hard cash than he gets for it. If there were ten thousand subscribers at the present price, it would not then even pay expenses. Were it not for the advertising patronage every issue would be a direct and dead loss, unless the number of pages were reduced one half. The advertisers enable us to give the subscriber a journal double the size the subscription alone would justify. The blank paper alone of the best one cent papers of Canada cost each issue double the price at which the paper is sold. The advertisements alone supply the sinews of war. And that is the simple reason why we feel justified in asking subscribers, in their own interest, to give their patronage to our advertisers, directly or indirectly. This journal and its readers are under deep obligation to these advertisers, every time the journal is issued.

The journal has in its own and only way done good service for the Associations of the Dominion. It has in its own way served the teaching bodies of the Dominion. But, from its first issue in 1868 to the present, it has never received one of their advertisements. Upon one occasion the Ontario Dental Society gave it a contribution of $25, which was expended exclusively in the interest of the same Society. The cost of publishing in Canada a journal which depends entirely upon the patronage of advertisers and subscribers, is much greater than if the publisher had any connection with a depot, which could make extensive and profitable use of its pages.

We leave our readers to ponder over these facts. The journal is not a beggar, and never will be, but there are dentists in Ontario and Quebec who would give a bigger subscription to bury than to boom it. They may be enthusiastic about its contemporaries, whether published in the United States or England, and may do all they can for their circulation, and nothing for the circulation of our own. There are so many good-souled fellows in our ranks, and so many who forgive us our editorial trespasses, that we could afford to be charitable to those whose anathema is their only benediction. To the few who get into the sulks, and who ignore the existence of a Canadian journal, we try to return good for evil. But if this journal is not expected to keep clean the skirts of the profession and demand open and above-board integrity from its members, it would have no particular *raison d'etre* for its existence. It would be better to bury wrongdoers than to bury the journal.

OVER-STOCKED.

That the profession is over-stocked in Ontario and Quebec, goes without saying. That it is an injury to the profession as well as to the public to continue the present encouragement, for entrance must be apparent to ordinary common sense. The sooner remedies are proposed and applied, the better it will be for those who suffer by the surfeit, as well as for those who innocently come into our ranks. It is declared by many that to ask compliance with a code of ethics in face of the boasting competition and lying of quackery, is to put a penalty upon right and a premium upon wrong. Honest men must live, and will not suffer starvation for their ethics. Those who have well-established practices, and who enjoy various collateral means of retaining and increasing them, should put themselves in the place of the host of young beginners who have to struggle to pay expenses.

There is no use mincing the matter; there is not room in any of the Provinces for all the dentists we have made; there will be less for all we are making.

The remedy is simple. Increase the qualifications for entrance, as well as the period of study. Five years is not all sufficient, yet it is not perhaps possible to exceed that time. The fees are altogether too low. Both parties in the Ontario Legislature favor anything that will raise the standard and value of education. Unless some fellow has a personal axe to grind, or some member thinks he can "pull the dentist's leg," we ought not to expect opposition to needed amendments. We have been for many years giving quite too much attention to the convenience of "the public." The public would not object to free trade in practice and to a dental "parlor" at every street corner. It is only just to give a little more attention to the "convenience" of the unfortunate crowd of poorly paid dentists.

JOHN BULL AND JONATHAN.

Have'nt the dentists been long leading the way in the fraternity of the two nations, while the politicians and the press have been as long beating the wind? The American dental societies from Maine to California have never once withheld the open hand of welcome to Canadians and Britons generally. We have had many a good time between us on both sides of the line, and we have discussed our little political differences, and understand each other better than we did before. Jonathan as a politician may find it hard to do justice to Canada as an integral part of the British Empire, but Jonathan as a personal and professional friend has a heart as big as his country. We are less emotional, we Canadian Britons, than our brothers, and we take our stubbornness and other such national virtues from Old John, but we can never forget the ties which bind us, and with all our heart we rejoice in the success of the Stars and Stripes in the war.

ADDITION TO THE DENTAL COLLEGE.

On the fifty-foot lot recently purchased, and immediately to the west of the Dental College, on College Street, will be erected an addition the full height of the back part, which will be formed into a side entrance, with the professors' rooms on the ground, a photographic room on the first floor, and a bacteriological room on the second floor. The addition will cost not more than $2,000. The grounds of this college will also be fitted up for recreation, and it is intended to have an alley board placed there to utilize the vacant space, which is hardly large enough for football.

THANKS TO VERMONT STATE SOCIETY.

We return the thanks of the publisher and editor to the Vermont State Society for their generous treatment of this Canadian journal, which made it possible for us to give so many pictorial memories of a memorable visit.

ONTARIO DENTAL SOCIETY MEETING.

The August issue will be another specially Ontario number, to contain the papers received at the meeting of the Ontario Dental Society in Toronto, portraits of the officers, etc.

EDITORIAL NOTES.

☞ Read the advertisements carefully.

WHAT is the matter with the societies in Manitoba, North-West Territory and British Columbia?

THERE are many people who never believe in a dentist's honesty, until some "real painless" rascal has cheated them.

WE regret that we have not the space to give to many society, college and other reports sent us from over the border, and many of which are of more than local interest.

WE refer any of our readers who intended going to Dr. Haskell's Post-Graduate course, to the advt. on another page, which announces a vacation for August and September.

IT is very odd how the youth who tells you that he is "awfully busy," and has his appointments several weeks ahead, cannot pay his tailor, the dental depot, or his subscription to the journal.

The Dentist. Vol. I. Hampton & Co., 13 Cursitor Street, London, E.C., London, Eng. Monthly. Seven shillings per annum. A handsomely arranged and well-edited addition to the journals of England.

ONE of our patients, aged fifty-four, began the eruption of one of his superior *dons sapientiæ*, the same day that his grandchild, aged five months, had its first deciduous tooth. If the baby could express its opinion, it would no doubt call the old man a slow coach.

WE often receive newspapers from friendly correspondents containing somewhere something they want us to know. They should be marked, as we rarely know who they are from, and we have little time to hunt them over to find out what is intended for our benefit.

ONE of our oldest practitioners thinks that some of the questions asked by enquirers are trifling. "Queries" is meant for the limitations of the inexperienced, as well as for the experience of the wise. If those who know it all would help those who do not, Dr. Sparks would have no space left for those who know so little that they are not ashamed to ask for advice.

SEVERAL of our well-known confreres have died recently; some of them under tragic circumstances. That is all we can say, for that is all we know. It should be easy for a dentist in each locality to send us such personal items, verified under his own signature. But it is not possible for an editor unaided to keep track of the births, marriages, deaths and divorces in the profession.

The Dental Century. Vol. 1, No. 1. Madison, Wis., U.S. Monthly. Another venture in the field of dental journalism, which is expected to do good work, specially for its own State. It is very neat, and aspires to "have all issues as original as possible." There is nothing original now, however, excepting original sin. We wish our bright little contemporary every possible prosperity.

MANY of our readers owe the publisher for several years' subscription. Those who get this journal every month, get it for less than it costs, and they may thank the advertisers for it. By using collateral advantages the publisher is able to give us for one dollar a year a larger periodical than any circulation obtainable would warrant. It is not much to ask those who owe for it to pay their debts.

WE miss the personality of our friend Dr. J. Ed. Line, in the disappearance of the *Odontographic Journal*, of Rochester, N.Y. Keenness of competition brought the spicy quarterly "over the Falls" with the Rochester Dental Company. The best part of it, its late editor, whose wisdom and wit inspired it, is, however, very much alive, and we hope he may not forget that we have a brotherly regard for the productions of his pen.

TOO many clergymen and churches of all creeds; too many convents and monasteries and charitable (?) societies; too many hospitals or too much abuse of them; too many physicians, lawyers, dentists, school teachers and civil engineers; too much "higher education," too many B.A.'s and M.A.'s, many of whom could not pass a common school exam. Too many who can talk Greek and who do not know their mother tongue. Too many students of all sorts and conditions, three-fourths of whom would serve God and man better on farms.

Millions of acres of the finest lands in the finest country on the face of the earth, and hundreds of us fools enough to keep our noses to the treadle and strain of the unhealthiest of all the professions.

FOR reasons best known to themselves, there are worthy men who object to aggressive reform. Where they discover roguery or rottenness, they want to administer the reproof gentle. Theoretically, they are pioneers of the millennium. Practically, they are milk-and-water mischief-makers. In the politics of dentistry they are either on the fence or under it, apologetically pouring oil upon troubled waters as if they were addressing a school class of eunuchs. They think aggression is all wrong, that "evil will cure itself," that this journal should be blind to quackery, deaf to scandal, and in general devote itself to "suckling fools and chronicling small beer." They do not want to stab the devil in the back, and they will not tackle him to his face, so they display towards him a deferential idiocy. They are the milk-sops of dentistry.

WE are afraid there are officials who imagine that there are no limitations to their liberty to make laws and by-laws and use as they like the money accruing from the members who elected them. Every licentiate is entitled to know how every dollar is expended, and corruption begins when indifference in this matter is shown. Boards of Examiners are neither permanent nor infallible. They are merely the appointed trustees of the interests of the electors. Individually or collectively they can be impeached for wrongdoing. They have no right to make topsy-turvy of the instructions given them ; they have no power to alter or amend one iota of the explicit lines of conduct desired by the licentiates, as expressed at the regular meetings. The books and correspondence and accounts are the property of the licentiates and are merely held for them by the Boards in trust during their term of office. If mischief or mistakes are made, the licentiates have only themselves to blame. Every possible light should be demanded, and no detail as to how money has been expended should be kept from the knowledge of the electors. Honest men never try to conceal details. There is reason for suspicion when efforts are made to bluff or to hide. There should be a clear understanding of the rights of licentiates, and the limitations of the Boards.

J. M. BRIMACOMBE, BOWMANVILLE,
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ADDRESS OF THE RETIRING PRESIDENT.

By J. A. Marshall, D.D.S., Belleville, Ont.

Mr. President and Members of the Ontario Dental Society: On the occasion of my retirement from the highest office in the gift of this Society, I desire to express my sincere thanks and gratitude for the kind consideration received at your hands. As a mark of distinction, the honor conferred upon me has been fully appreciated, and I may express the hope that any shortcoming or oversight on my part in safe-guarding the interests of the Society, or any seeming discourtesy to any member of the profession, will be received by you in a spirit of charity, as I assure you it has been entirely inadvertent. The harmonious desire and united effort of the management to make this meeting one of marked success deserve special mention and commendation. I can say, in all candor, that if anything should mar the pleasure, or deduct from the profit of this peculiar occasion, it will be something beyond their control, and will occur despite their most zealous efforts to prevent it.

I have called it a peculiar occasion. This you will easily understand when you remember that this meeting of the Ontario Dental Society has either incorporated, or been incorporated into the celebration of the thirtieth anniversary of the statutory measure known as "An Act Respecting Dentistry." Without dwelling on these distinctions, we trust that general interest will centre, not in one or other, but that the significance will be attached to the united meeting. A feast has been prepared, the guests have been invited, and now we sincerely hope that a hearty response may crown the efforts of the management, and that many eager appetites may be surfeited with the richest delicacies of the present day. The bill of fare is varied and attractive. The savory, easily masticated and highly nutritious object lessons of Profs. Wright and McKenzie, and of Dr. J. B. Willmott, the solid, every-day necessary of Dean Black with the dessert of the anniversary, interspersed with a variety of toothsome side-dishes go to make up a most desirable and palatable repast. It is not my intention to enter on a lengthy dissertation on the possibilities or probabilities of the science and art of dentistry, but will content myself with referring briefly to some of those undesirable features that are prevalent in our profession, as in all others, in the hope that bringing them before the notice of the Society will tend somewhat towards their abatement. In the first place, let me mention the apathy that exists in the ranks of the profession respecting the "gathering of ourselves together." Why this should be is beyond the conjecture of an ordinary intelligence, and to obviate it much anxious thought has been exercised, and efforts are yearly being made to remove this deplorable condition of lethargy which is unfortunately so prevalent. Can it be possible that so many members of the profession imagine that they have acquired all knowledge, or is jealousy to insinuate itself to the detriment of the profession, or is it that this huge majority of nearly five hundred dentists cannot condescend to associate with this poor minority of knowledge seekers, or is it carelessness and lack of interest in the profession? While the cause of the trouble is in doubt, one thing is certain, that it is a case hard of treatment, and a remedy suggested by any friend will be received with gratitude.

Next, a word as to those who fail to recognize the importance, to say nothing of the courtesy, of promptly replying to all correspondence where it is expected. Very much annoyance and disappointment arises out of laxness in this respect, and very frequently at a time when it is most keenly felt. As the most frequent cause of this evil appears to be carelessness, it is all the more culpable, as admitting of no reasonable excuse. Therefore, out of consideration for the feelings of the new management, if for no other reason, I ask you to be more prompt and business-like in this respect in future.

Another evil, rather peculiar in nature has been practised somewhat too successfully for a considerable time. I refer now to the practice of "sponging" into our meetings and utterly ignoring the important fact that the conduct of the Society costs money. Many have shown by their actions that they considered it highly beneficial to attend our meetings and catch the seeds of thought intended for those alone who honestly contribute to the support of the institution. While we glory in the strength of numbers, we seriously object to professional men, who give nothing to our support, sharing equally in the profits with those who freely contribute to the support of this Society which gives an hundred-fold dividend on the stock invested.

This would also seem a fitting occasion to again strongly urge upon every dental practitioner in Ontario, who does not already receive it, to identify himself with the progressive, loyal and reading men of the profession by subscribing for the DOMINION DENTAL JOURNAL. The editor of this Journal is doing a noble work in placing it within easy reach, and how any can be so obtuse, as to ignore the value of being able to so easily familiarize himself with our own dental literature, is a hard nut to crack.

If, then, the thoughts suggested in this rambling way are but received in the same kind spirit in which they are expressed, the result may be that a hoped-for improvement will take place along the lines indicated.

I cannot allow this opportunity to pass without expressing sincere sorrow at the death of our late Treasurer, Dr. C. P. Lennox, and bestowing a humble tribute of respect and esteem in memory of one so warmly attached to our Society. He was ever ready, and never refused to bear his share of our burdens. A companionable man, who always looked on the bright side, and knew not discouragement under any circumstances, his removal is a loss to his associates, his profession and his country.

And now, in conclusion, it is with a pardonable pride that I allude to the fact that my regime has fallen in a most eventful time. We are here celebrating our professional jubilee, the thirtieth aniversary of our incorporation, which gathers around it most interesting associations. And further, during my term of office occurred the diamond jubilee of our beloved sovereign, who stands without a peer among rulers in justice, mercy, and Christian character, of whom none can point to one unrighteous act. And when she has passed away (and may that not be for many years) she will receive from others, as well as her own people, more honor, respect, thanks and praise than ever was accorded to any other ruler that ever graced a throne. God save the Queen.

DENTISTRY AND DENTISTS IN ONTARIO BEFORE 1868.

By H. T. Wood, L.D.S., M.D.S., Toronto.

Mr. President and Gentlemen: It is no easy task to turn the wheel of time back thirty or forty years, and bring to one's mind the then condition and surroundings of the dental profession in this Province.

As early as 1845 such men as Drs. Rand, Wood and Jones were in practice in this city. These were followed by Drs. W. C. Adams, J. W. Elliott, G. L. Elliott, F. G. Callender, G. V. N. Relyea, H. H. Nelles (the first Canadian to obtain the degree of D.D.S.), W. J. Slater and many others in Ontario whose names I either have not known or cannot recall, the number in January, 1868, being about 200.

All dental operations before 1868 were performed by the hand, and our burrs and drills were revolved by the fingers. In preparing a cavity for filling, a chisel was used in cutting away the thick walls, and excavators, burrs and drills for forming retaining pits and completing the cavity. Gold and tin-foil were inserted and consolidated solely by hand pressure. This involved great care and no slight risk. Well do I remember an unfortunate mishap under the old method. It occurred when filling an upper cuspid with gold, from the inside outwards. My plugger suddenly glanced from the tooth, and so great was the force used that it pierced the lip of the patient before I could stay my hand.

Tin-foil fillings were used a good deal in those days. Oxichloride of zinc was first used in 1858 or 1859. Amalgam was in generel use at that time, particularly by a certain class of travelling dentists. It was in fact their only filling medium. I have seen approximate cavities in the incisors that were all filled together with black amalgam, made by mixing silver filings and tin-foil with quicksilver. Such fillings were frequently loose, but not sufficiently so to fall out, and were highly satisfactory to their innocent owners, who supposed that they contained some mysterious property which preserved the teeth from decay.

Dentistry in Ontario in early days had some rough-and-ready operators, and the pain of toothache was often surpassed by the pain of extraction. In one village the blacksmith was the township dentist. On a visit from a patient he would leave the forge, wipe his hands on his apron, get the old turnkey wrench, and his brawny arm would soon draw not only the sufferer's tooth, but often the screaming patient himself, from the old kitchen chair.

Immediately preceding the Dental Act, we had a number of worthy practitioners in every city and town of this Province, who used every means in their power to elevate and advance the dental profession. They subscribed to the dental journals, carefully studied them, and read with interest such reported proceedings of dental societies as were available, and, when possible, attended and took part in their discussions.

In the *Cosmos* we find reported a meeting of the Michigan Dental Association in the city of Detroit, in January, 1860. The report says: "The officers for the ensuing year are, Dr. C. S. Chittenden, Hamilton, C. W., President; Dr. William Cahoon, Detroit, Vice-President; Dr. L. C. Whiting, Detroit, Secretary and Treasurer."

Mr. President, I first read this report thirty-eight years ago. To-day I read the name of the late Dr. C. S. Chittenden with a sense of sorrow mingled with pleasure. Of sorrow, because we have lost a dear and valued friend. Of pleasure, because we well remember the untiring zeal and energy he always manifested in helping to make the dental profession in Ontario what it is to-day.

Thirty years ago and more was a time of great activity to all thoughtful dentists. Each suggested improvement was examined with scrupulous care. In fact, it was the day-dawn of invention and improvement, not only in practice but in material.

Early in the history of dentistry in this Province the operating chairs were of great variety, and in many cases an ordinary house chair was used, which was occasionally improved by a primitive head-rest. They were made, in those days, so that they could be fastened to the back of a chair by a thumb-screw. A little later high-backed chairs were raised on a platform and did good service. Later on the dentist would make a sketch, and call on a cabinet-maker to build a chair specially for him. Some of these chairs were very nicely upholstered, and comfortable for the patient, if not for the operator. One of the first chairs made for the purpose (and which was then considered quite wonderful) with movable back and seat, was the "Archer chair." All of these chairs I used in the order in which I have mentioned them, before the year 1868.

The invention of "hard vulcanite" made quite a revolution in the dental laboratory, adding new appliances suitable for the manufacture and finishing of this material. My first experience with the vulcanizer was in the village of Brighton in 1859. About that time I sent to Rochester, N.Y., for one, and a pound of raw vulcanite, and instructions for its use. When the vulcanizer arrived I found that I had a wonderful machine. It was about two and a half feet in length, ten inches in diameter, and was fitted up with a steam escape cock, a safety-valve and thermometer.

Its strength was about that of a four-horse power steam-engine. It weighed about a hundred pounds, and was made to fit an ordinary cook-stove. When I had any vulcanizing to do I would put the monster on the stove, much as a woman would her wash-boiler full of clothes on an early Monday morning.

After I had learned to use the vulcanizer, and had got some skill in handling an ordinary plate tooth by bending the pins in order to get the best hold on the rubber—it must be remembered that the pins in the teeth were only intended for gold or silver plates—a friend in Prince Edward County wanted a set of both upper and lower teeth put in—I had extracted the old teeth some time before—and invited me to visit her house and do the work there. So I packed my lathe, instruments, tools and vulcanizer, in a large chest, their united weight being about one hundred and fifty pounds, and started off. On arriving at my destination I took possession of one corner of the farmhouse kitchen and "set up shop." My experience with the vulcanizer there was most amusing. I fired up in the cook-stove and put on "my kettle" and raised the heat to three hundred and ten degrees, keeping it there for two and a half hours. At the end of that time I prepared to let off steam, first opening the outside doors of the kitchen. Then I turned the escape cock and out rushed the steam like the scream of a locomotive. The family cat (which had been peacefully dozing under the big farm stove) concluded the end of the world had come, and that under such trying circumstances she had better leave the room, which she did, fur on end, with the noise and rush of an exploding rocket, and her claws actually tore slivers from the floor in her frantic effort to escape.

My next amusing experience with the vulcanizer was a few months later, and just after I had located in Picton. By this time I had made a little improvement in my machine, and used a tin pipe to conduct the steam out of a window. The first time I let off steam there the neighbors were nearly as badly frightened as had been my friend's cat, and came rushing into the house to know "what on earth we were doing?" and "what was the matter any way?" while the cats and dogs for a block around the house flew in every direction as though they had been shot from cannon.

The introduction of the mallet to consolidate gold fillings in the teeth was a welcome aid. This addition to the operative department made other improvements necessary in order to keep the teeth dry long enough to complete the operation. The napkin in many cases proved a failure, and other appliances were invented and used. Duct compressors and tongue holders were only partially successful, and in fact nothing was found to be perfectly successful till Dr. C. S. Barnum, of New York, invented the "rubber dam" and presented it to the dental profession in 1864. In recognition of this noble liberality the dentists of the United States gave Dr. Barnum, through the American Dental Association, $1,000 and a gold medal. A gold medal, gold watch and considerable sums of money were presented by other societies. Forever blessed be the name of Dr. Barnum for his invention and his gift. What an inestimable boon to us has been the rubber dam.

The next improvement was the automatic plugger in place of the hand-mallet. Then came the dental engine, with all its improvements and appliances, and the end is not yet.

I have merely referred to these improvements, as owing to my books and records having been destroyed by fire many years ago, and having hardly any time for research it is difficult to do otherwise than trust to memory, which I hope has not led me to trench on ground which will be ably dealt with by my friend Dr. Marshall.

Despite improvements, the dental profession was as a body very weak. We were not in a position to professionally protect ourselves and the public. We were acting as individuals, instead of conjointly, and what we really wanted was organization. Although we had many first-class men we also had a class of men who were a discredit to the profession ; men who made no effort to inform themselves in the principles of dentistry, but who went about the country ignorantly and presumptuously talking dentistry to the curious crowds which gathered to listen to them ; and sometimes before the victim was aware of his intentions the dirty fingers of a dental vagabond would enter a rustic's mouth and many a good molar would be doomed. Then would come the professional advice : "Several teeth must be pulled and others should be filled." As a rule this would occur in the country and among the farmers who had large families, and the "doctor" had a keen eye to business when he learned one of the sons of the house was suffering from toothache. "Well," said he, "it's a lucky thing for you that I've come round here to-day. We'll soon pull out all the ache, and put the teeth of the whole family in good shape." "But," the farmer would say, "what about the cost? When there are so many teeth to be filled and extracted seems to me you ought to make some reduction in your prices. Do you?" "Of course I do," says the doctor ; "there will be no trouble on that point. My price is twenty-five cents for each silver filling, and ten cents for pulling a tooth. Why, if you went to town to have this job done it would cost you from fifty to seventy-five cents for silver fillings, and twenty-five cents for having a tooth pulled. Sometimes when I've a lot of work to do for one family I fill six or eight teeth for one dollar, and I don't suppose the whole job here will cost more than five or six dollars. So now, if you say the word, we will bring our tools in and begin right after dinner.

Of course you'll feed the horse, and give us our dinner in the bargain? Here is my assistant. I generally have some one to help me. You see I can take a smart young man and learn him the trade in six weeks. Now just look at this young man. This is his fourth week, and he can fill a tooth just as well as I can, only not so quick. Say, farmer, you ought to have one of your boys learn the trade. It only takes about six weeks, and the cost is only $100, and he will come out a first-class dentist."

You may think this a highly-colored picture, but to prove that it is not too highly colored I will relate a little experience of my own. About thirty-five years ago a young man came to my office in the town of Picton. He was the son of a well-to-do and highly respected farmer in the county. The visitor told me he had just finished his apprenticeship as a dentist with Dr. —— and would like to look round a little before he began business for himself. I asked him how long he had been under instruction, and he said, "Six weeks." I then asked him what dental books he had been reading. He said he had not read anything on dentistry except an odd number or two of the dental *Cosmos*, and had paid his instructor $100. He had done no work in a dental laboratory, and didn't think his teacher had one. If he had, my informant knew nothing about it. I saw his standing at once, and wanted him to see it too, so I told him he could stay in my office for a few days if he wished to do so. Then I placed in his hands "Maury's Dental Art" and "Harris' Principles and Practice of Dental Surgery." They were the first standard works he had ever seen. He asked, and I answered a great many questions, and gave him all the instruction I could in that short time. He was with me for three days, and in that time had arrived at the conclusion that he knew nothing about dentistry and had thrown away his money. Also, that it would require as long a time, and as much study, to become a dentist as a physician. So he gave up the study of dentistry and began that of medicine, going to Kingston where he took a regular course, and graduated in due time. He is now, and has been for a long time, practising medicine in this Province. This young man was not the only one the same travelling artist had turned out as a full-fledged dentist to damage and defraud the public. Some I knew, and others I heard of. Quacks in other parts of the Province were turning out from six to eight men a year. It was most humiliating. I have been in communities where these men had been operating, and I felt ashamed to be known as a dentist. Such was the degradation of the dental profession immediately preceding the passing of the Act.

The time for a momentous change was, however, fast approaching. Light was springing up in the east, and the "Day" star was beginning to shine.

A short time before the end of 1866 Dr. B. W. Day, of Kingston, mailed a circular to every reputable dentist in Canada West, convening a meeting, to be held in the city of Toronto at the Queen's Hotel, on the 3rd day of January, 1867. There were present at that meeting, B. W. Day, M.D., Kingston ; C. S. Chittenden, Hamilton ; F. G. Callendar, Cobourg ; J. O'Donnell, Peterboro ; Henry T. Wood, Picton ; A. D. Lalonde, Brockville ; M. E. Snider, Toronto ; D. A. Bogart, Hamilton, and J. S. Scott, Cobourg. B. W. Day was appointed chairman, and J. S. Scott, secretary. The chairman stated that the object of the convention was to organize a "Dental Association," and to take steps to procure the passing of a law requiring dentists to pass an examination. A constitution was adopted "requiring that candidates for membership, in addition to professional knowledge, shall have practised successfully for five years in one place and one established office." The following officers were then elected : President, B. W. Day, M.D.; 1st Vice-President, C. S. Chittenden ; 2nd Vice-President, H. T. Wood ; Treasurer, F. G. Callendar ; Recording Secretary, J. S. Scott, M.D. ; Corresponding Secretary, J. O'Donnell ; Librarian, D. A. Bogart.

After the usual business was attended to, a committee was formed, consisting of the President, Vice-Presidents and Secretary, to draft a Bill of Incorporation to be submitted to Parliament at its next session. The next meeting was appointed to be held in Cobourg on the first Tuesday in July, at 7 p m. This closed the first meeting of the first dental Society in Canada West.

The second meeting was held in Cobourg in July, 1867, according to previous arrangement, and thirty-one members were in attendance. The meeting in Cobourg was of very great interest to the profession throughout the Province. The success or failure of the object to be attained was no longer in doubt, and no one thought of opposing the organization of a "Dental Society" and the drafting of an Act to be presented to Parliament at the next session. The standard qualification in the draft was as follows : "All persons being British subjects by birth or naturalization, who have been constantly engaged for any period less than five years in established office practice, next preceding the passing of this Act, in the profession of dentistry, shall be entitled to a certificate of 'licentiate of dental surgery' upon their furnishing to the said Board satisfactory proof of their having been so engaged, and upon passing the required examination, and upon payment of such fees as may be authorized and fixed by the said Board, for the payment of which the Treasurer's receipt shall be sufficient evidence ; and all persons being British subjects by birth or naturalization, who have been constantly engaged for five years and upwards in established office practice, next preceding the passing of this Act, in the practice of the profession of dentistry, shall upon such proof as aforesaid, and upon the payment of the fee as aforesaid, be entitled to such certificate without passing any examination." This was the foundation of the Act respecting dentistry. All other clauses were not only to enforce the conditions of this Act, but to make rules and regulations for the elevation and education of the dental profession, as may from time to time be required for the general good of the people of Ontario. Other important business matters were transacted at the Cobourg meeting, after which it was adjourned to meet in Toronto in January, 1868.

A session of the Association was held in Toronto in January, 1868. The dental profession was well represented. A petition was presented to the Legislature praying that an Act be passed requiring dentists to pass an examination signed by the Professors of the two medical schools in Toronto and the leading physicians of Ontario, including several members of the Medical Council.

The Bill was placed in the hands of Dr. G. W. Boulter, M.P.P. The promoters of the Bill communicated with the dentists of Ottawa, when they signed and returned the petition, praying for the Act. Petitions were also sent in from the professfonal men of Belleville, including Albert College, the dentists of London, and the Reeves and Deputy-Reeves of Northumberland and Durham, the professional men of Cobourg, including Victoria University. At the first reading of the Bill the Association attended Parliament in a body. When the Bill was read for the second and third times some opposition was shown, and several names were added to the Board of Examiners, and this appeared to satisfy the opponents. The select committee of the House were called together and the chairman, Mr. Rykert, presented a draft of the Bill, which he thought would pass without opposition, keeping as nearly as possible to the draft adopted by the Association. "The committee reported the Bill and it was passed on the last day of the session." The Dental Act came in force on the fourth day of March, 1868.

The dentists of Ontario should remember with gratitude the names of Dr. G. W. Boulter, ex-M.P.P., Mr. J. C. Rykert, ex-M.P.P., the Hon. R. W. Scott, ex-M.P.P., Dr. Baxter, ex-M.P.P., Dr. McGill, ex-M.P.P., Prof. Aikins, M.D., Prof. Berryman, M.A., M.D., Dr. Dewar and Dr. Whitney. These men gave us most valuable assistance when we were greatly in need of help, and their kindness should never be forgotten by the dental profession in Ontario.

And now, Mr. President, in closing this slight sketch of "Dentistry and Dentists in Ontario before 1868," permit me to heartily congratulate my co-workers of the past half century on the splendid success which has attended their life-long labor of love. Some of the old pioneers have already gone from the scene. It cannot be long ere others pass away. May it be said of us, that we loved and honored our profession, and strove to advance, perfect and hand it down with a fair and creditable record to our successors.

To the dentists of to-day permit me, in conclusion to say, Honor your calling and it will honor you. Give to it the best qualities of your head and heart, with patient and unflagging energy, and those of you who in 1928 take part in the 60th anniversary of the Dental Act will be able to hand on to another generation a profession better fitted to alleviate the pain and minister to the necessity and comfort of your fellow-countrymen than we have bequeathed to you.

DEVELOPMENT OF DENTISTRY FROM 1868 TO 1898.

By J. A. MARSHALL, D.D.S., Belleville, Ont.

Mr. President and Members of the Ontario Dental Society:

The fact that there appears as a feature of our programme so important a function as an account of the development of dentistry during the last thirty years, would lead you to think that in the ordinary fitness of things the person to whom this task is assigned had been advisedly chosen. However, to forestall any adverse criticism, I will confess that it is a case of mistaken identity. Not a few of those present by reason of their personal knowledge of the whole period, and their superior capacity for narration, are vastly better qualified to present a subject of this nature to so an intelligent an audience as that here assembled, and which in the hands of some of them might have been the milk of the anniversary cocoanut.

Dr. Wood has done ample justice to his subject, which may be with no little propriety called "The Past of Dentistry." His association with many of the incidents covers most of the ground, and this added to his cultivated propensity for making himself familiar with the details of the history of the profession, admirably adapt him to the number he has just given with so much acceptance.

Dr. Willmott fittingly observed at the opening of this complete little building, that "in the beginning dentistry as a profession in Ontario was without form and void." To my mind, that beginning maintained until that memorable third day of January, 1867, when the initial organization meeting was held in Toronto on the invitation of a hitherto modest dental-medico of the City of Kingston—Dr. B. W. Day, who up to that time had possessed and nurtured a little thought seed—an organized dental profession.

All told, nine good men and true responded to the call, and constituted the first dental society in Canada, and thus at one bound the little embryo developed into a society of nine members, full of enthusiasm and a determination to apply for adoption papers in the form of an Act of Parliament to recognize this new birth as one of the adopted children in the family of Miss Ontario.

After organizing with due formality, with Dr. Day as president, the first issue discussed was that of legislation. It was unanimously decided to ask Parliament at its next session for an Act of incorporation. On duly considering the situation and arranging as much detail as possible, it was decided to draft a bill before the next half-yearly meeting to be held at Cobourg in July, where they hoped to further discuss and finally mature the undertaking. The progressive spirit was fast gaining ground, and as a result of a notice that appeared in a Toronto paper that the dentists had organized, the July meeting was attended by more than seventy-five members of the craft, each one of them desirous of joining the association. At this meeting the draft of the proposed bill was received with much favor, and the majority endorsed the sentiment expressed at the previous meeting, to petition the Legislature.

The third semi-annual meeting was held at Toronto on January 20th, 1868. with a very large representation of the dentists of the Province. The scene is rapidly changing, the bill as drafted is favorably received at this meeting by a fair majority, and a petition signed praying the Legislature then in session to grant its adoption.

The scheme is ripe, the time has come, and Dr. Boulter, M.P.P. for North Hastings, has kindly promised to lobby it through ; but at this point Dr. H. T. Wood, who was always ready with bright ideas, moved that they adjourn to the Parliament buildings in a body to present their prayer in as forceful a manner as possible. The result was that it was read a first time on the 30th of January, a second time on the 11th of February, although it was greatly imperilled by the agitation of the minority, many of whom feared the effect of it should it become law. So on this account a great deal of bitter antagonism had to be overcome before its final evolution from the embryo which had been in gestation exactly fourteen months.

It was brought forth, its adoption papers signed, and it received the euphonious title of "The Royal College of Dental Surgeons of Ontario," on the 4th day of March, 1868, which is to us an important date in dental history ; the thirtieth anniversary of which we this day celebrate.

The new dental Act was far from being perfect, but it was equal to anything that could be framed at that time, for the profession itself being imperfect would not have tolerated a perfect statute could one have been constructed.

The promoters of the Act found that they could not move much in advance of the times, and so governed themselves accordingly. However, the Act was a grand effort; it was not copied, it was not improved, it was designed. Without compass or luminary in the dental horizon, without pillar of cloud by day or pillar of fire by night other than the indefatigable zeal and admirable courage of a few ambitious men, tempered with good judgment, a keen sense of justice, the wisdom of serpents and the harmlessness of doves, a frail craft had been launched and safely guided over an unknown sea.

The members of the Provisional Board incorporated in the Act held their first meeting in Toronto—where all annual meetings were to be held—on the fourteenth and fifteenth days of April, 1868, for organization and transaction of business, which, while it fully occupied their time, consisted largely in perfecting the necessary arrangements to insure as much success as possible to the management of this huge innovation.

The twelve members judiciously selected so as to represent all parts of the Province were present, and elected the following officers: President, B. W. Day, Kingston; Secretary, John O'Donnell, Peterboro'; Treasurer, C. S. Chittenden, Hamilton; Registrar, H. T. Wood, Picton. Of these four, one—H. T. Wood—is present with an unbroken record on the board to his credit; one, Dr. Chittenden, has gone whence no weary traveller returns; the other two, Drs. Day and O'Donnell, though absent in body, are with us in spirit.

Of the eight members of that board, Dr. J. B. Meacham—who still cherishes a warm spot in his heart for dentists, although not following the profession now—has promised to be present, and hopes to be refreshed by the repetition of the critical events of thirty years ago, and by associating once more with the old boys. Dr. Relyea of Oswego, N.Y., eighty-two years of age, and still at the operating chair, is in evidence with a short sketch and a greeting. John Leggo of Ottawa is alive and well, and has a recognition, while Scott, Lalonde, and probably G. L. Elliott have gone to their reward. Kahn and Callendar left the Province, and have been lost to us until quite recently when their addresses were obtained, but unfortunately too late for any reply to be obtained from them in time for this meeting.

It was a fitting mark of recognition that the presidency was given to Dr. Day, who had immortalized himself by his noble purposes of raising dentistry from the condition of a mere craft to that of an honorable learned profession, vouchsafing its emoluments to those who thoroughly equipped themselves to handle in an intelligent manner all the operations that fall under the category dental, and at the same time protecting an innocent public from the rapine and jugglery of unprincipled devotees, who on serving a few weeks or months and the payment of a small sum of money, would publicly proclaim themselves both capable and reliable.

Allow me to introduce to you this hero and benefactor. The central portrait on the wall before you represents Dr. Day as he appeared about the time of which we speak. Will you rise and welcome him? While referring to the first president and his noble efforts, permit me to state that his hands were ably supported by such men as G. V. N. Relyea, John O'Donnell, A. D. Lalonde, J. S. Scott, M.D., F. G. Callendar, H. T. Wood, whose portrait all will recognize at Dr. Day's right, and who held the position of president from July, 1870, till '77, and C. S. Chittenden, who was president in all something over sixteen years, and whose portrait appears to Dr. Day's left.

In courtesy we cannot pass from the portraits without referring to the other two, Dr. R. J. Husband, our genial president, who has occupied the chair with much acceptance since 1893, and, as his position indicates, nobly supports his predecessors; and last, but not least, that of Dr. J. B. Willmott, our worthy dean and secretary, whose individuality has made itself felt in no common degree in maturing the many worthy and progressive schemes of the last twenty-five years.

These portraits, gentlemen, regularly adorn the walls of our board-room, and have just been placed here for the anniversary.

Asking your pardon for this little digression, we will return to the subject and follow up the thread of our history in a few particulars.

The board met twice a year, in July and January, for the purpose of granting licenses and the transaction of business.

All must be familiar with the "five years' office practice prior to 1868" clause, and the source of annoyance it has been of recent years, and from that can form some idea of the effect it had at that time of clogging the wheels of the machinery. Although great caution was observed and strict requirements exacted, nevertheless many applied for licenses and even got them fraudulently, notwithstanding the affidavit and the certificates of two medical men as to their knowledge of some of the subjects required, and from two clergymen as to their moral character.

One of the greatest difficulties to cope with was the numerous tramp dentists, many of them Americans, who from their wandering proclivities left their mistakes behind them, and this, added to their inability, rendered them a scourge to the country and a stench in the nostrils of respectable men. Even these applied for licenses, and in some cases obtained them.

For those who had not been in office practice for five years examinations were set, and from the deplorable manner in which the candidates attempted these it was clearly demonstrated that in order to develop capable talent to meet the demand, a school was absolutely necessary. Some such step, too, must be taken to add dignity, so that the rising men might command some degree of respect from men of other professions.

Dr. G. L. Elliott made an effort in 1868 to establish a school, The Canada Dental College, but it was an ephemeral attempt, and in direct opposition to the wish of a majority of the board, and the result was that its existence was short, and its usefulness lost in insignificance.

In 1869, the board, realizing that the educational interests were not enhanced by the terms of the Act, while things remained as they were, decided to open a school.

So in the latter part of that year F. G. Callendar and John O'Donnell undertook to conduct the dental subjects, and I think physiology, at the corner of Church and Court streets, associating with them Drs. Day and Chittenden, while the remaining subjects were dispensed at the medical school, and in the classes with the medical students.

This arrangement lasted but one session on account of mismanagement in the dental department. While no fault was ever found with the teachings or the teachers, one thing seemed certain, and that was it had no recognized leader.

Further, too, a reckless disposition of the funds brought about embarrassment to such an extent that the furnishings had to be realized on to meet the demands of the creditors.

You may easily imagine the deplorable condition that maintained in respect to the theoretical as well as the practical departments of the profession. Of course text-books were available, and so far as preceptors were able and willing, some vague ideas of the knowledge required might be secured, but one and all must confess that even then with a change from a few weeks' instruction to that of two years' training under a preceptor and regular examinations, there was as yet nothing more than the first faint glimmerings of the light of the present day.

The gloom that prevailed so appalled the minds of the progressive men of the board that a committee was formed to cast about and discover some enterprising individual or individuals who would undertake to open a private institution under the patronage of the board, and relieve the tension by some means or other.

Drs. F. G. Callendar and W. C. Adams were interviewed, and volunteered to step into the breach, but it was the same old story, and in school boys' parlance "they played hockey," and the beginning was the end of their educational enterprise, leaving the situation more galling than before, as the promoters of the enterprise felt the effects of defeat as well as the reproaches of those slow coaches who antagonized the movement.

About this time, too, Dr. Day was prevailed upon to leave his native Canada and locate in Chicago, and thus sever for all time his connection with those faithful coadjutors who had participated in many a fierce battle, contending with all the courage of their convictions and a dogged determination to elevate dentists and dentistry to the level of a learned and honored profession, and so well did they eventually succeed that a fitting monument perpetuates their efforts.

In 1870 Dr. J. B. Willmott, whose services during the succeeding years cannot be overestimated, was elected to the board and became its secretary. On the removal of Dr. Day, his mantle fell most properly on the leader of the future, Dr. J. B. Willmott, when all the indomitable energy and courage that characterized the former in securing legislation and in taking the first steps to elevate the profession, were doubly intensified in the latter, who sedulously set himself to work out the balance of the scheme so cleverly inaugurated by his great predecessor, but hampered by no inconsiderable obstacles.

The Dental Association now began an agitation for a school, and urged the board to make another effort, when Dr. Willmott, having associated with him the astute and capable Dr. Teskey, in the autum of 1875 opened. at the corner of Richmond and Victoria streets, a school, which, from its inception, supplied the proper material for the production of a robust and progressive following.

Certainly its beginning was small, and the very maintenance of its existence taxed to the utmost the determination of the courageous promoters of the scheme. Their efforts, however, finally prevailed, and with the addition of Dr. Stuart they formed an exceptionally strong trio of educators, and under their able tuition proper instruction was amply supplied to those hungering and thirsting for a higher dental education.

But, as time moved on, a marked increase followed in the number of students, and as circumstances permitted better facilities were adopted in all the appointments of the institution. Dr. W. E. Willmott was added to the staff, and new quarters secured to meet the requirements of the augmented classes, and thus was an honest effort made to furnish the very best compensation to the students in return for the time and money spent in acquiring the profession.

Matriculation, at first nominal, was soon made a matter of consideration. Indications pointed to the possibility of the profession becoming filled with an illiterate element, and this possibility, added to the fact that a good general education is an essential element in the structure of dignity, induced the board to adopt a high standard of matriculation, which has kept pace with the advance in all departments of the institution.

From nothing in 1868 to a level, with the matriculation into any of the learned professions in 1898, is the evolution that has obtained with regard to the first move in the game of entering the profession of dentistry.

Societies have played an important part in the advancement of every department of the profession, and through these agencies much good has been suggested, and ultimately developed into benefits which, when concentrated, form in Ontario the most complete system in existence to-day.

The Dental Association of Ontario was the first, and rendered splendid service, even if many vigorous, wordy battles did occur (and it is even whispered that by the coarser element bare knuckles were used on one occasion).

Some of these disputes resulted, less than two years after inauguration, in the organization of an offshoot society called the Ontario Society of Dentists; but in less than a year, both societies meeting in Toronto at the same time, councils of war were held, the pipe of peace was smoked, the hatchet buried, and the united wigwam was called the Union Dental Association.

This Society moved on in the even tenor of its way, suggesting amendmenis to the Act, reforming abuses, and engaged in the mutual improvement of its members generally.

Although the name has changed more than once or twice, yet the fact remains that by a sort of apostolic succession we are here to-day, the same old, original Society which formerly had an admission fee of $4.00, and gave each member an elaborate certificate.

Many city and district societies have sprung up at several times and rendered good service in their way, but perhaps the most notable of these is the Eastern Ontario Dental Society, which I have been led to believe was established for the purpose of investigating and correcting the supposed crooked ways of the board.

Consequently at the following annual meeting of the Union Dental Association a number of wise men came from the East to participate in the election of the board, with the result that Drs. L. Clements of Kingston and C. A. Martin of Ottawa were elected. Dr. Martin being the spokesman, made a close scrutiny into the past conduct of the board, and on his return to the East reported to the E.O.D.A. that he had been well received, and although a few hot shots had passed between him and Dr. Willmott, he found him a capable man, well qualified to guide the board on a broad and progressive platform; a man of strong religious principles, aggressive, and hard to conquer in debate. His report as to the other leading members of the board was equally favorable, as, *e.g.*, Dr. Chittenden was a whole-souled, genial companion, capable in many ways, and honorable in his intentions and actions. Dr. Rowe was a most conscientious man, straightforward in all his actions on the board. Dr. Wood is by nature incapable of doing a dishonorable act, justice and right-doing is his invariable motto.

Instead, then, of finding anything crooked, he had to report most favorably of the majority of the board, and was impressed by the integrity and force of character of the leaders.

These incidents are mentioned to show how truth and error may very easily, and frequently do, become misplaced.

We have traced some of the incidents down to our affiliation with Toronto University. Much agitation had been maintained along the line of the degree of D.D.S. This agitation began shortly after the passing of the Act, and among other suggestions was a proposed amendment to the Act giving the College University power. To this the Government objected and suggested affiliation. After the lapse of fifteen years affiliation was accomplished, and now a combined Board of Examiners sets the examination, and thus does away with the necessity of two separate examinations.

The outcome of a recent agitation by the E.O.D.A. was that the regulations were ratified whereby the board was to take over the full management of the College. Ontario was to be divided into seven districts, and the board was to consist of one representative of the faculty and seven members elected, one from each of the seven districts of the Province.

The members of the first board under the present system took office in 1893, since which time their labors have been most marked in the accomplishment of the stupendous undertaking of building and furnishing this Alma Mater—a lasting monument to the united and harmonious efforts of the board to render the best service possible to the electors of the several districts.

If it were possible to place this institution with all its appointments side by side with that of 1869, a comparison of the then and the now would be as the light of a tallow candle contrasted with the light of the sun.

In preparing this paper the records of the board have not been utilized. Many of the irregular fragments have been gathered from the memory of the patriarchs of the profession. And most of these men, in referring to incorporation, the rapid pace set in working out the whole scheme of almost perfect legislation, enforcement of the Act, matriculation pupilage, thorough teaching in a costly and well-equipped building of our own, and the ample provision made for maintaining a reliable management, have expressed themselves as simply amazed.

OUR RESPONSIBILITY FOR THE FUTURE OF DENTISTRY IN ONTARIO.

By R. J. HUSBAND, L.D.S., D D.S., Hamilton.

We have met here at this time to recognize in a fitting manner the anniversary of one of the most important events in the history of dentistry in Ontario. You have heard from Dr. Wood of the disadvantages under which the pioneers of our profession labored, and the struggle they had to secure the legislation that has done so much in giving us the high standing that dentistry occupies to-day. Dr. Marshall has spoken about the development of dentistry since the passing of the Act, and it remains for me to say something as to the manner in which we assume our responsibility for the future of dentistry in Ontario. Our responsibility does not mean the responsibility of the Ontario Dental Association or any other dental association as an association, neither does it mean the responsibility of the Board of Directors of the College of Dental Surgeons, as a board, nor the Faculty of the College as a faculty, but it means individual responsibility, what is expected of you and what is expected of me as individual practitioners. This being the case, the responsibility of guarding the door of entrance to our profession rests upon the shoulders of the preceptor, he alone being responsible for the quality of the material he allows to enter our ranks. If the future be what we desire, greater discrimination must be used in selecting this material. I believe the time has arrived when students should be taken on a three or six months' probation before being articled, in order to ascertain whether or not they possess the necessary qualifications for proceeding with the study. The standard of matriculation has been fixed so that there is no short cut along this line in entering the profession, but there is, however, another standard which we must insist upon if the future of dentistry is to be what we hope. It is not enough to be endowed with mechanical ingenuity and manipulative skill, but combine with these qualifications, a good moral character, purity of mind, word and action, quiet dignity and self-respect, with no taint of malice, deceit, or falsehood, and you have a standard worthy of attainment. We cannot shut our eyes to the fact that many of the brightest men in our profession came from the most unpropitious material, but times have changed, former customs have given way to better civilization and better judgment, and so it is our duty to do all in our power to select the material that will do honor to the future of dentistry. The student must be faithful and diligent, devoting his time to study and research, and keeping personal pleasure in the background or as a means of necessary recreation only. His devotion to his work should commence with the first period of his student life that each day's instruction may be prepared for by what has gone before; there is no doubt that the deficiencies of many in practice can be traced to waste of time and inattention while at college. The student must do battle daily and hourly against indolence, self-indulgence, and the various temptations that beset him on every hand, thus fitting himself for the higher form of struggle growing out of competition with other minds, and for that still higher, the impulse to reach the highest state of professional life. Having set up a high standard which we want our students to reach, the qustion may well be asked: Is the College in which these students must spend three years, abreast of the times, and does it occupy an honorable position amongst the colleges of to-day? I believe that it is fully up to date in every particular. This College with its splendid equipment is owned by the dentists of Ontario, each of whom has an equal share both in ownership and management. It is conducted with the one sole aim of turning out the best possible dentist and not as a money-making institution. Couple with this the fact that it has affiliation with the leading University of the Dominion and you must come to the conclusion that the Royal College of Dental Surgeons occupies a position second to none in the world. There must be no standing still or going back; every upward step makes another needful, and so we must go on till we reach the highest standard. We have extended the curriculum from time to time, till it now embraces every subject taught in modern dentistry. The question may be asked here, Can the average student in the three and a half years now demanded of him, master all the subjects embraced in this extended curriculum? I believe he cannot. He may get a good general knowledge of the work required of him, but cannot become thoroughly master of it. I believe the time has arrived when another year added to the term would be of great advantage to the student as well as to the future of dentistry. Some one may ask, "What about the teaching staff?" I answer, that while they have done good work in the past, they must do better in the future. A teacher who has to convey instruction to students who are faithful readers discovers that they expect the best, and that they know the genuine from the inferior. It is a greater gratification to the well-prepared lecturer to have just such students under him than to have those who are careless, stupid and indifferent. But naturally the strain upon the lecturer, week after week, of supplying the demand for such a high standard of perfection, and at the same time attending to his own professional and domestic duties is too great. The future of dentistry demands that students of to-day get the best possible teaching, and it is next to impossible for any teacher to do the best that is in him unless he is quite able to ignore the superior claims which press upon him in his struggle for daily bread. I believe the time has arrived when such liberal remuneration should be given our lecturers as would enable them to give more time to research and instruction. A few words now to the young man who is just commencing practice. Much of the burden of responsibility for the future must of necessity rest upon your shoulders, the temptations to stray from the "straight and narrow path" of professional rectitude which will beset you are more numerous and more strenuous than is generally supposed. After sitting in your office for some time waiting anxiously for the patient that comes not, it seems hard to think that the loud advertising quack in the next block has his office crowded with patients, and you will no doubt reason somewhat after this fashion, "Does it really pay after all to live up to the highest standard of professional morality? Why not just step aside for a short time and do things that are not just right for the sake of the money I so much need?" To all such I would say, there will come times of discouragement, and times when everything seems to go wrong, times when receipts are small and expenses large, these are the times that try men's souls. The future of dentistry demands that you take fresh courage and not allow yourself to be tempted under these trying circumstances, to do anything unbecoming to an ethical dentist. Do the right because it is right. When tempted, pause and look around you and see how many have gained by questionable methods. Count up the advertising men who have attained to permanent success from any standpoint. They may seem to flourish for awhile, but is it not the fact that they invariably become disappointed men? It is impossible for them to secure an established position in the minds of intelligent men, for advertising is known to be opposed to all real professional principles. The patronage of an advertising dentist must of necessity be made up of the poorer classes of people who are ignorant of professional relations, and who never become permanent patients. As soon as the loud advertisements are stopped, or when some other dentist with a new kind of attraction makes his advent, the old one is forsaken and drops into poverty. Should misfortune overtake him when he has passed the most energetic period of his life, he finds himself with no established practice, no old families upon whom he can rely, because his practice has been made up of transient people. He must always accept low fees, and his profits are swallowed up in advertising. The only way to succeed so that your influence may be felt upon the future of dentistry is to keep within professional lines, and by steady perseverance secure the settled confidence of the community. *Be honest;* by this I do not mean the honesty that impels a man to pay his just debts and to refrain from cheating his neighbor, but I mean that higher and nobler spirit which makes the true professional man scrupulous to a nicety in everything touching professional honor and personal verity.

Allow me to sound a note of warning regarding the use of stimulants which has grown to be such an evil in our land. These are the concluding words in a paper on the "evolution of the mind," by no less a person than David Starr Jordan, President of Leland Stanford University: "The influence of all drugs which affect the nervous system must be in the direction of disintegration, the stimulant which gives false pleasure forces a lie upon the mind, the drug that disposes to reverie destroys the sanity of life; the healthy mind stands in clear and normal relation to nature. Here lies the one great unanswerable argument for total abstinence, not abstinence from alcohol alone, but from all nerve poisons and emotional excesses. No great work was ever accomplished under the influence of drugs or stimulants; the great thoughts and great works which have moved the world came from men who have lived pure noble lives."

This is a deliverance in favor of total abstinence, from one of the best minds on the continent, and should receive from you the respect it deserves, and should be a stimulus to us to encourage in every way a high temperance sentiment in our profession, so that the men of the future will be clear of mind and steady of hand.

It would be in the best interests of the future of dentistry had we a thoroughly organized system of dental associations, local societies, in all towns and cities; in fact, wherever two or three members of the profession could be got together, they should meet regularly for interchange of thought. Over these local societies, district associations which should meet quarterly, and over these a provincial society, such as the Ontario Dental Association, meeting once a year. I believe we should extend our limits, and I look forward hopefully to the time when we shall have a Dominion Association meeting in different parts of the Dominion, say every second year. Imagine a thoroughly organized system of dental associations extending over this Province when every dentist would be called upon to contribute in some form or other his share of value, and you can form some idea of the stimulative effect. The local societies would act as training schools where the timid and over modest brother would become accustomed to the sound of his own voice.

Through the influence of these training schools some of the younger members of the profession by some professional achievement which would give them standing and recognition among their brethren, might seek distinction at the meetings of the larger societies. These local societies or training schools would have a tendency to rub off the rough edges and sharp corners from the men whose respect for the profession is bounded by their own selfishness, and who would, if possible, crowd every other practitioner out of existence. Under this organized system of associations what a lively interest would be manifested, and with what eagerness would we look forward to the time when we would go up to the meetings of the Ontario Dental Association, not empty-handed and empty-headed as many of us do now, but bearing with us our individual responsibility for the success of the meeting, and with a feeling of brotherly love to compare our experiences in a spirit of emulation rather than rivalry, always bearing in mind that there is some single point in which the humblest may stand as a teacher to those most experienced. The best future of dentistry demands that we make a faithful and honest effort for the enlightenment and education of the public. Lack of professional qualification and moral responsibility in the past are accountable for much of the present want of confidence in us. Irreparable harm is worked by destroying public confidence. The inefficiency and deceit of the dregs of the profession are recognized by the few, but not by the many. We need some method of establishing a change of sentiment on the part of the public, giving information concerning their dental need and possible betterment, directing attention to the source of service, denouncing evil, and annouucing good, thus counteracting the effect of fraudulent and inefficient practice. The audacious quack is the educator of the masses to-day. With his deceitful advertising, he attracts and educates right or wrong. There is a grand field in Ontario to-day for mission work in educating the public regarding the functional value of the teeth. Individual members of the profession are responsible for the wide spread of ignorance and misinformation about dental affairs which prevail everywhere.

It is a low and unworthy view anyone takes of his office, when he assumes that he has nothing to do with public ignorance except as he may be called upon to operate for a compensation. Dignified silence does not enlighten the public, and while we owe a debt of gratitude to Dr. Beers and his noble band of helpers for the healthy, educational sentiment contained in the columns of the DOMINION DENTAL JOURNAL, this means of circulating information does not reach the general public.

The masses read the newspaper, when they read anything ; therefore to ignore this channel for circulating information is to shut out the dawning hope of popular dental education. The newspapers are our best friends and would, I am sure, be glad to insert well-written articles on various subjects relating to dentistry. Of course we would use discretion by not asking them for space during an election campaign. Why will our leading men not vie with each other for prominence and precedence in taking up this work? I trust that we may be so impressed with its importance that this association will appoint a committee to take charge of it before the close of this meeting.

By the record of the present time shall we be judged by posterity? The century which gave birth to modern dentistry and which has witnessed in it a growth unprecedented in the history of all professions draws rapidly to a close, and those who fill an active place in the profession now will occupy a conspicuous one when the history of the present shall have been written. It rests with us whether this century shall witness one more triumph, the establishment all over the Dominion of a uniform standard of qualification for graduation, and between the Provinces reciprocity in dental diplomas. While we in Ontario are face to face with an overcrowded profession, the newer Provinces, whose population is so rapidly increasing, need more men, and as their dental educational advantages are not so fully developed as ours, they will be shortly calling to us in Ontario to come over and help them. This would relieve the congested condition of the profession here and supply these Provinces with the best possible dental service. I trust this subject, which I have only touched upon (but which I believe to be of vital importance to the future of dentistry), will be taken up at this meeting, and, if thought feasible, a committee appointed to confer with the other Provinces.

Look forward into the dawning twentieth century and contemplate the advance that dentistry will make to the yet higher and broader plane which it is destined to occupy, and in that vision will be foreshadowed the place which will be accorded to you in the future. Let us "work while it is called to-day, for the night cometh when no man can work." Let us seek a definite and worthy end—a future limited only by the possibilities of our united wisdom and energy. Let there be no going back, but ever onward and upward, emulating in professional, public and private life the noblest qualities of our predecessors.

Listen, my brothers, your profession is calling,
  Time strikes the hour for the brave and the true;
Now, while the foremost are fighting and falling,
  Fill up the ranks that have opened for you.

You whom the fathers made free and defended,
  Stain not the scroll that emblazons their fame;
You whose fair heritage spotless descended,
  Leave not your children a birthright of shame.

THE PAST, PRESENT, AND FUTURE OF THE PROFESSION IN ONTARIO.

By C. N. Johnson, L.D.S., D.D.S., Chicago, Ill.

Gentlemen of the Ontario Dental Society: When an invitation came from one of your officers to contribute something to your anniversary exercises it forced upon me a mood half reminiscent and half prophetic, because it so chances that I am one of that number about midway between the scenes. I have not lived long enough to be called a pioneer, but I am fast approaching that period where I can no longer boast of being one of the boys. To attempt to say anything from personal experience upon the subject of "dentistry before 1868" would, of course, be folly, because my personal experience in any line of thought was exceedingly limited at that date. And yet I cannot allow myself to pass lightly over the pioneer period. I want to take this opportunity with the rest of you to pay my tribute of respect to those men who went ahead in the dark and lighted the way for us to follow. I wonder if we of latter days stop often enough to consider the difficulties which these men had to surmount, the discouragements they encountered by the way, or the sum total of their magnificent achievements?

The obligations of the present generation of dentists to the men of an earlier era were vividly brought to my mind by an interview I had some months since with the late Dr. Thomas W. Evans of Paris, France. On the occasion of his last visit to America, shortly before his death, it was my privilege to meet him and receive from his own lips the recital of many intensely interesting reminiscences connected with his early practice in Europe. When Dr. Evans first went to Paris he found the profession of dentistry practically in the mire. They had a phrase among the French people of that day to designate any one of a particularly unreliable nature—"he lies like a tooth-puller." This phrase originated with the fakir tooth extractors who plied their trade on the street corners, and vociferously proclaimed that it would not hurt to have teeth extracted. This evident misrepresentation soon forced itself upon the people to such an extent that they went away declaring that all other monstrous liars should be compared to these liars. And this, in the minds of the majority of French people of that period was the sum total of the legitimate practice of dentistry.

Dr. Evans related to me with much feeling the chagrin and humiliation which he suffered in those early days when, on being introduced into any new circle of society, he was invariably subjected to a look of the most utter contempt when the fact was made known that he was "nothing but a dentist." Said he, "In the course of my career I have met some of the most noted generals of modern times, and I have always contended with them that the pursuit of their calling did not demand of them as high a degree of courage as was exacted of me in the beginning of my professional experience abroad. If a soldier goes to the battlefield the most that can happen to him is to be killed. If he is killed—well, that is his business any how, and he dies on a field of glory. There was no such incentive for me in my early struggle to maintain the dignity and importance of dentistry, and if there is anything connected with my professional life in which I can take some degree of satisfaction, it is the fact that it has been given me to accomplish something in the way of placing dentistry in its true light before the world and demanding for it a just appreciation."

But, in passing, let me say that if Dr. Evans' early experience was bitter, his final achievement was in some respects the most unique and pronounced of any man who ever lived. He was possessed of such a marked individuality, was favored with a demeanor at the same time retiring and forceful, and he had such a genius for making and retaining friends in high places that during the course of his career he was on terms of intimate friendship with most of the crowned heads of Europe. This man who went to France from America a mere boy, unheralded and unsung, ended by being the confidant and comrade of kings and emperors, of potentates and presidents; and in all the personal aggrandizement that fortune showered upon him he never failed to turn it to account in the elevation of his profession by an insistent and unceasing declaration of the fact that the man who received these favors was a dentist. It is hardly too much to say that the dental profession of the entire world stands to-day on a higher plane of appreciation on account of the influence of this one illustrious pioneer.

And so, on this occasion, I feel like paying a just tribute to the memory of the men who did so much for us in the past when the status of dentistry was such that much required to be done. These men of Ontario who labored in advance of the present generation of dentists are entitled to the respect and homage of every practitioner and every student who is now enjoying the fruits of their early sowing. We are too often prone to accept the advantages and privileges of the present without stopping to consider the difficulties of the past or to give credit to the men who surmounted those difficulties.

These old pioneers deserve a fitting recognition from the profession, and, more than this, they deserve it while they are yet living. We should not wait till the grim reaper has asserted his inevitable prerogative, and then come when the ear is closed, the eye dimmed, and the tongue is stilled forever, and pour out our poor praise upon the silent casket. Let us shower upon these men the blessings we feel in our heart of hearts, and do all we may to sweeten their lives and lend a fragrance to the pathway of their declining days.

In speaking of the present progress of the profession in Ontario my own personal experience practically dates back to the autumn of 1880 when I entered as a student in the school of dentistry of the Royal College of Dental Surgeons. Looking back over those few years and recalling vividly as I do the college and equipment of that day when we were located in a little "tumble-down" at the corner of Victoria and Richmond streets, with few of the facilities that are considered necessary for students to-day, and then contemplating the magnificent structure in which the present meeting is being held, I am profoundly impressed by the advancement that has been made since then and the earnest it gives us of what may be attained in the future.

I cannot pass this phase of the subject without reference to one feature which seems to me worthy of note. In the days of my studentship in this institution the three principal teachers were Professors Willmott, Teskey and Stuart; and I hold it to be a significant fact illustrative alike of their fitness for the work and of the stability of Canadian institutions when we find these same men occupying their positions to the present day, I wish to take this opportunity, as one of their old students, to pay my tribute of appreciation for the benefits received at their hands. In those days I knew not so well as I do now the trials and anxieties of a teacher's lot, and if I unwittingly did aught in the thoughtlessness of student life to add in any manner to their burden I am here today to offer my apologies and amends. The relationship between professors and students should be of the most cordial and reciprocal nature, and the ties that are formed in college should not be allowed to loosen when the student passes outside the doors and becomes a practitioner.

But I must pass to a consideration of the third feature of the subject on the programme, "What shall be the future of the profession in the Province?" And now, with your permission, I shall address my remarks mostly to the younger element. The contemplation of a body of young men just starting out into the practice of dentistry is invariably a source of inspiration to me. I am always impressed with the possibilities of what may be accomplished by them in the course of their professional career, and I realize more vividly even than they do themselves how much the future of the profession depends upon them. Just stop and consider for one moment the significant fact that the young men graduating to-day are to form the bone and sinew of the dental profession a decade hence. If we could make them realize the full import of all this in the early part of their professional experience, it seems to me that they must thereby enter upon their work with loftier aims and a higher consecration to the exacting duties which their relationship with humanity makes incumbent upon them.

If, for instance, a young man could look ahead far enough to see that, with the proper kind of application, it would be given him to finally attain the position held by some of the leading lights of the profession to-day, that he should be enabled to ascend to the prominence of those whom we of the present generation delight to love and honor for the good they have wrought to dentistry—if, looking to a broader attainment even than this, he could see clearly enough and broadly enough to estimate the sum total of his service to humanity through the perfection of our beloved profession, what an incentive such a vision would be for him to consecrate himself to the loftiest aims of the highest manhood within him.

After all, the great thing for a practitioner of dentistry to keep in mind is not the attainment of wealth, not the plaudits of his fellows, nor the fleeting fame of an occasional achievement. Desirable as all of these may be, they sink into nothingness compared with the obligation that every true man and every true dentist owes to the world in the betterment of the human race. It is given to us as dentists, in the practice of a profession which is eminently humanitarian in its highest possibilities, to add materially to the sum of human happiness, and he who does this must be accounted a benefactor to his race. What more noble or holier service can be conceived than the relief or prevention of human suffering? This phase of our professional duty does not often enough appeal to us, or we do not often enough recognize its true significance. Let every young man take cognizance of the fact that the more proficient he becomes in his professional work the better he is able to serve humanity. Let him go further than this and consider the possibility of good he can do by spreading the knowledge he has attained freely among his fellows through the medium of societies so that they may in turn benefit humanity by such diffusion of knowledge. This continual expanding of one's usefulness in the profession is the most inspiring feature connected with society work. It is also the one thing of all others to which, when bowed by weariness and worn with care, the teacher in a dental college may resort for his chief solace and compensation. No matter what his discouragements may be, no matter how meagre may sometimes seem the results of his most earnest and painstaking endeavor, he may always console himself with the fact that in his humble way he is laboring toward the far-reaching betterment of humanity. Every time a student goes out of college and, by virtue of the knowledge obtained while there relieves human suffering, he is adding a benediction to the man who taught him.

Think of the power for good in the world that a conscientious teacher may thus exert. And think also of the responsibility that such a view of the question imposes upon a teacher. Every man who stands before a class of students should be imbued with the seriousness of his influence, and should consecrate himself to the fulfilment of the highest aims and objects of such a position. He should see to it that his teaching is of such a character that his students are well equipped to go out in the world and serve their fellow-men.

Reverting to the question as to what the future holds for the profession in Ontario, I am impelled to say a word of congratulation and encouragement. You men of the Province have much for which to be thankful. In one respect at least you are far in advance of the profession in the United States. Your requirements for matriculation are such that none but young men of superior attainments can gain admission to your college. I am frank to confess that we of the United States are simply grovelling in the dust in this particular. We are admitting young men whose early training has been practically no training, and who have not been sufficiently developed in methods of thought and study to enable them to readily grasp the complex problems that are necessarily presented for their solution in college. To those of us who have the best interests of the profession at heart these are unpalatable facts, and our only encouragement lies in the hope that we are just on the verge of a reform along this important line. But with you this reform has already come, and it is to the everlasting honor of the profession in Canada that your institution was among the pioneers in this respect.

With such a foundation for your dental educational system you have it in your power to rear a class of professional men that shall stand as the peers of any of their kind in the world. It is to the consummation of such a prospect as this that I commend your united efforts. On this the occasion of your anniversary exercises let me appeal to you to dedicate yourselves anew to the observance of those principles which make most for the advancement and welfare of the profession. It is only thus that you may hope to accomplish that which is your bounden duty, not only to yourselves, but to that other and more important entity of human life—your fellow-man.

TREATMENT OF CHRONIC ABSCESSED TEETH.

By Dr. D. C. Smith, Stouffville, Ont.

Modern dental literature is replete with papers and discussions relating, among others, to the subject of abscessed teeth ; and probably in no other department of dentistry is there more diversified modes of practice advocated than in the widely divergent methods and means brought forward in the treatment of chronic abscessed teeth. Teeth diseased with alveolar abscess, having fistulous opening, is occasionally one of the most stubborn to yield to treatment, especially when of long standing. Every practitioner will bear me out when I say that the prolonged treatment of chronic abscesses entail more arduous work and gives far less remuneration, proportionately, than any other branch of the dental surgeon's practice. I venture to affirm that there are few in the profession who have been in practice any length of time, but have on record a failure in the treatment of "abscessed teeth." For these reasons and for the benefit of any who have not, and who wish to experiment with the campho-phenique powder method of treatment, I will endeavor to give my mode of treatment with the above-named drug.

After securing a good opening and washing out debris and foreign matter from the cavity and bur canal where possible with Gates-Glidden drill, syringe and dry canal. Pump hydrogen-peroxide, or better, pyrozone well up the canal. Mix the powder on a glass slab with 95 per cent. carbolic acid into a creamy consistency, and after thoroughly drying out, force the carbolized powder up the canal with a smooth coarse broach. Fill up canals and chamber of the tooth with drug, and seal with phosphate cement or gutta percha. Leave for two weeks to a month (according to the gravity of the case). When the dressing is removed and the roots filled with chlora-percha, and tooth permanently filled, a second application is rarely necessary, which in itself is an item in the saving of time and material.

In all the drugs with which I have experimented, this has been to me the most successful, having yet to record a failure, after passing what I now consider the experimental stage. The question has been asked and may again be asked, "Can we not get as good results from the campho-phenique liquid?" I say most emphatically we cannot ; the therapeutical action being more concentrated, active, penetrating and curative ; and, again, the escharotic danger in application is minimized. I need hardly say that a careful review of the practice of dentistry will present in many directions many methods to attain any given end. The ever recurring case calls for repetition of experimentation, and many of us who, wearied by it and seeking rest, have fallen into ruts, are frequently not a little mentally disturbed at the intimations received, that our rut is, after all, a side track when compared with that of another equally conscientious brother who advocates his as the main one.

P.S.—Since reading above paper at Ontario Dental Association, I have had many enquiries in regard to the composition, properties, and mode of preparation of the campho-phenique powder. All I can say in answer to this is, that it is a grey powder, much resembling ground pumice in consistency, and is manufactured and put up by the Phenique Chemical Co., of St. Louis, Mo., U.S. It is used largely by surgeons as a germicide and antiseptic dressing. It is questionable if it is kept in stock by any Canadian druggist, as my druggist was compelled to send to New York for it. D. C. S.

PRESERVATION OF THE DENTAL PULP.*

By DR. W. A. SANGSTER, Port Perry.

In this paper I desire to enter a plea for the preservation of the dental pulp, and also a protest against indiscriminate pulp-capping. I am aware that this subject opens up a wide field for discussion. We are told by one school of practitioners to destroy a pulp on sight, " because dead men tell no tales." By the others, " never to injure the pulp." My own impression is, that were cases for capping selected with more judgment than is generally the case, we would hear less about the number of failures attributed to the operation. It would seem almost unnecessary, in the light of our knowledge of to-day, to advance reasons for preserving pulp when possible. A few words on that point will be sufficient.

Dr. Garretson, speaking of the dental pulp, says : " Through this body the internal structure of the tooth is nourished, in its death the organ loses its translucency, becoming discolored and opaque, being indeed devitalized, except as nourishment is received from the periodonteum.

Dr. Black, whom we have the honor to have with us at this meeting, speaking before the American Dental Association, says : " The teeth from childhood up to forty-five years of age, increase in density. The moment the pulp is dead, this increase in density stops. Whenever a tooth has lost its pulp, and begins to show discoloration, the dentine strength is impaired. It may weigh all right, but its strength, as tested by the dynamometer, is impaired; and there is a peculiar disposition of the enamel to chip off from the dentine. A vital tooth does not show this latter peculiarity."

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*Read before the Ontario Dental Society.

There can be no question but that many pulps, which have never been exposed, are ruthlessly destroyed by the pernicious habit of placing large metallic plugs in very deep cavities, with, perhaps, but a very thin floor of parti-devitalized dentine intervening between the living tissue and the filling. Not only does the pulp in such cases receive violent thermal shocks, but the pounding presses the floor inward. To this may be added the injury caused by a certain amount of expansion, if a silver-tin amalgam be used. Such practices are little less than criminal. You have all seen in your own practices, as I have in mine, the victims of this treatment, presenting, with putrescent pulps, fistulæ opening through the gums or through the palate, and sometimes necrosis of the alveoli. All such cavities should be varnished with some non-conducting varnish, and then cement flowed over the entire cavity, being careful not to fill the undercuts, or to cover the margins of the cavity. It is the part of wisdom when we meet with exposed pulps, to obtain in every case as full a history as possible. The prognosis may be regarded as favorable when:

1. The patient is moderately healthy.
2. If the pulpitis is acute, and we can resolve it by vigorous antiphlogistic treatment, such as counter-irritation, depletion, cathartics, hot-pediluvia, etc., combined with the use of local anæsthetics.
3. If the exposure is accidental through careless excavating, and where there is no pulpitis.
4. If the patient is not exposed to sudden changes of temperature.

On the other hand, the prognosis is unfavorable when:

1. The patient is recovering from, or is subject to, any disease that tends to lessen the general vitality; such as syphilis, fevers, cancer, etc., or is asthenic, *i.e*, badly nourished; or,
2. The pulpitis has advanced to the chronic condition.
3. Any condition, or conditions, are present which, in our judgment, would contra-indicate the operation.

When the prognosis is unfavorable we should devitalize.

Of capping materials and methods of operating we have many. Some are good and some invite failure. I, myself, have never been successful with oxychloride of zinc as a capping agent. We are told to use it thin, and to dry quickly with bibulous paper. It is supposed to produce just that amount of stimulation necessary to cause the pulp to produce secondary dentine. I have alway found that sooner or later it devitalizes the pulp. A method with which I have been very successful is as follows: Take a small pine block and, with ball-headed instruments of different sizes, burnish small depressions in the pine. Now take lead disks and burnish in any sized depression you wish with the corresponding ball-headed instrument. You have now a lead concave disk, trim with file and fill flush with Dr. Iever's pheno-banum. Invert this, concave side down, over the exposure, being extremely careful to use no pressure. Should patient complain, remove instantly, quiet the pulp with cocaine or oil of cloves, and then replace the cap. After the cap is in position, flow thin oxyphosphate of zinc over cap, floor and walls of the cavity, being careful to keep margins and undercuts free, and allow it to become perfectly hard. Finish with gold or any other material you judge best.

Sometimes we fail because there may be more than one exposure, one of which we have not seen. A good large magnifying glass should be used.

It is impossible to condense within the limits of a short paper like this, even a bald synopsis of the practical points that bear upon the question. My aim has been to be suggestive rather than exhaustive, to call your attention to the great importance of pulp-preservation, and to start a discussion in which the fathers of our profession here present may give of their experience and practical knowledge, for the benefit and guidance of the more youthful members of the craft. If I shall have succeeded, gentlemen, in pressing the matter on your attention, I shall have reached the end I had in view.

IN THE MATTER OF ADVERTISING.*

By MARK G. McELHINNEY, D.D.S., Ottawa, Ont.

Mr. President and Gentlemen of the Ontario Dental Association:

The question to which I desire to call your attention, that of advertising, is one that has come in for much consideration of late by dental writers. The frequent reference to this subject indicates that it troubles the profession, and presses for some kind of a settlement. The code of ethics is antagonistic to all sorts of recognized advertising, but there are many kinds of advertising which do not come within the meaning of the code, and which are not very closely defined.

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*Read at Toronto, March 3rd, 1898.

Prominence in social, religious and fraternal organizations is, with most professional men, a popular and pleasant method of bringing themselves before the public. To such an extent is this true, that success in many cases depends more upon a man's social attainments than upon his professional skill, and we sometimes see the strange sight of a professional incapable in possession of a large practice and considerable reputation, based alone upon social prominence and a winning personality.

Men occupying such a position are the first to assail a more retiring confrere, who seeks by other means, more distinctly understood as advertising, to bring himself before the public in his professional capacity.

Let us divest ourselves of all prejudice, escape from the thraldom of preconceived ideas and face the question upon its merits in order to reach a rational conclusion. Primarily, it is admitted in modern philosophy that it is impossible at any time to fix standards of right for all time, because ideas of right change with the requirements of the age. Most of us accept, to a greater or less extent, the law of evolution as applied to the social organism. Let us, then, as befitting members of a profession, calling itself learned, show that we are indeed possessors of higher knowledge by applying it to the solution of those problems that confront our profession as a part of the social organism. "The survival of the fittest" is an expression which is much abused, often mentioned and widely misunderstood.

We, who claim to be members of a learned profession, which claim is mere impudence if we cannot prove more or less knowledge of the advanced thought of our age, should not lie under the popular misapprehension of the term. We should be able to apply its underlying principle to those circumstances that govern the intercourse of ourselves as professional men with the general public.

The extreme difficulty of obtaining and maintaining a footing in the professions is the direct cause of the appearance of this new question which will undoubtedly persist in thrusting itself upon our attention until we attempt a solution, or until, in the course of events, it solves itself.

Certain indolent persons are in favor of letting all such problems work out their own solution, but that is not the method of procedure in the treatment of bodily disease, or even bodily discomfort.

We continually interrupt, divert and hasten physical phenomena in order to produce effects that we desire. Why should not matters of social disease and disorder be interrupted, diverted or hastened in order to produce a condition of things more in keeping with our requirements and more conducive to our development?

In the good old days, when all things advanced in a slow and dignified manner, professional men found it to their advantage to adopt methods in keeping with the existing state of affairs. In these days, the rapidly intensifying struggle for existence advances those only who rush into the front of battle, and by sheer force of character seize upon the results desired.

When things went slowly, and knowledge was reserved to the favored few, professional men were respected for the possession of what was hidden from the masses. They were more or less leaders of their times. To-day, the spread of education has produced, to a certain extent, an intelligent and critical public, whose opinions, even upon matters looked upon as strictly in the province of the professional man, are ~~not without~~ considerable value. We now have a most peculiar spectacle. The general public, stirred by the rapid progress of late years, has acquired a momentum, arising from their newly discovered inherent tendency to advance, that threatens to overturn the ascendency of those very professions to whom the world is indebted for most of its knowledge. This effect is greatly due to the fact that the vast majority of men in all professions have lost, or perhaps never possessed, that wider view of their purposes and destiny, and have turned their efforts toward selfish airs which, though frequently successful in the individual, work certain ruin in the aggregate.

While the professional man is fully entitled to adequate recompense for his services, sufficient to enable him to exist according to the requirements of his position, he must not forget that he has a mission to perform, a duty to his fellows, and that is the persistent educational effort for the benefit of humanity. In no other field of human endeavor has there been opened up such magnificent opportunities for good as in the profession of the dental surgeon. In no other department can be found a field of labor that brings such immediate and beneficial results, both to the masses and to the practitioner. In no other progressive movement of the age do the benefactors themselves stand so good a chance of recognition and reward during their own lifetime as in dental surgery, and this last consideration, if no other, should be sufficient to stir the most selfish member of the profession.

In the good old days before mentioned, it was considered that patient industry and unassuming merit would eventually win, and undoubtedly they did. To-day, a fever is on the people, a hurry, a heedlessness, in all an unthinking selfishness that has no time to seek out deserving individuals. It wants the best that science can provide, and cares little for the individuality of the provider. In these days a man must say, " I am here, and have something of value for you."

How many patient, industrious and meritorious persons there are in the profession of dentistry to-day who lacked one thing for success, and that was "push." It is all very well for older practitioners, whose places are well won and safe, to decry any attempt to introduce new methods of reaching the public. Some of these old practitioners won easily, seeing that they had no competitors. Now their long establishment and reputation makes life an easy matter. They do not need new methods, and therefore, with that unreasoning narrowness so common in the old, declare that no one neeeds what they need not themselves. A young man, starting to-day in dentistry, if he possesses no capital, commences a strugle that those only who have labored under similar circumstances can form the slightest idea. The older practitioners who love to tell of their early struggles, and hold them up as far beyond present possibilities, would be surprised beyond measure to find out that as time goes on the struggle becomes, not easier as they fondly imagine, but harder, yea, almost impossible.

It is not the writer's intention to go into the economic questions that pertain to our modern social conditions ; such a subject is not within the compas of an article of this description. Few men have time, and fewer the inclination, to wade through the mass of reading, interesting though it be, that is essential to clear thinking on these subjects ; but there does not exist to-day a man, in whatever position in the social arrangement, that does not feel that the expression, "struggle for existence," is no fancy figure of speech, but a statement of fact that day by day grows into harder and sterner significance.

In view of this fact, which few are prepared to deny, it becomes clear that some action is necessary to provide for the numbers that are rushing pell-mell into an already full profession. In commercial life this problem has been already met and in some degree solved. The profession must increase its scope by making the people alive to their wants, by educating them to a full appreciation of their necessities. There are two methods by which this may be accomplished :

First, as a profession acting through its various societies, popular dental literature could be spread broadcast over the land, until not a man, woman or child could long remain ignorant of the importance of the dental organs. This is the ideal method that would result in great general good to the profession and to the world at large, but its realization is a utopian dream. This is the reason : The individuals that practise the dental profession are not, as a class, sufficiently intelligent, sufficiently broad-minded or sufficiently unselfish to recognize an individual benefit arising from general welfare. To recognize this principle requires more or less philosophy, and the majority of men of any age, any profession or any condition are not philosophers.

In the dental profession to-day are many men whose acquirements would grace any walk of life. In the dental profession today are too many selfish, ignorant, egotistic, jealous, small-minded creatures, whose horizon is bounded by the streets on which they live, and whose highest interest is the number of dollars that they can wring from the public in a given time. Without the co-operation of the whole profession, concerted action in the direction of popular dental education is impossible.

As you cannot show these selfish ones exactly how much benefit in figures they will reap in a given time, they will have nothing to do with it, and so co-operation is impossible. These men want practical results, the frequent cry of those who cannot think ; those to whom abstract ideas are as Greek, and first principles as foolishness. This is the class that, priding itself upon its practicalness, has always barred the way of progress, and shall undoubtedly prevent the dental profession to-day from reaping the benefit of a policy which but for them would become an accomplished fact. At some future time, when this derogatory element shall have become eliminated, as it probably shall, the dental profession may attain that high position of which it even now gives strong indications.

The second method, and which is attainable now, is popular dental education by individual practitioners. This practically assumes the garb of modern advertising, for while it cannot fail to educate the people, it also cannot fail to bring into prominence the names of those engaged therein to their advantage, and possibly to the disadvantage of the practitioner who fails to avail himself of similar means.

This the writer regards as a coming condition, and it behooves those of the profession who think, to see to it that in coming it possesses as few evils and as many advantages as possible.

It is to be hoped that the new method will not follow the model of modern commercial advertising, which is a battle of prices, misstatements, glaring falsehoods and misrepresentation of competitors. Though this method may eventually educate, its good taste is questionable.

The direction in which dental education and advertising combined would tend to produce the best results, would be in the form of short articles elucidating dental questions, and pertaining to the relations between dentist and patient. These articles would be required to be couched in non-technical language, language simple, brief and forcible, that could not fail to carry its meaning to the most humble capacity. In such it would be well to omit all reference to prices and special methods or claims that might tend toward the detriment of brother practitioners The writer should certainly omit recommending himself, or, in fact, all reference to himself, leaving the effect to be produced by the merit of the production and his signature. While such a method might also, in some cases, indirectly benefit less liberal-minded practitioners, such benefit should not be begrudged since the time is certainly coming when these non-progressive members shall need all the consideration that can be accorded. For self-seeking, in the narrower sense, ever defeats itself in the long run.

From these considerations it will be seen that the writer defends and encourages the work of popular dental education by means of pamphlets and similar publications as advertising media, providing always that the methods used shall not contain anything beneath the dignity of a learned profession, or derogatory to the character of fellow-practitioners.

The writer further commends these few ideas to his confreres for their consideration, and trusts that at least his efforts indicate that he has the welfare of his profession at heart.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

ASSOCIATE EDITORS:
G. S. Martin, D.D.S., L.D.S., TORONTO JUNCTION, ONT.
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EDITOR OF ORAL SURGERY DEPARTMENT:
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7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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THE INDEPENDENCE OF THE JOURNAL.

One of our best and first friends, who has occupied different positions of trust, lately told us that he heard it said that this Journal was subservient to the Board and the College, and in fact, that nothing in regard to these bodies was inserted until it had been read and revised by their officials. It is quite true, and quite untrue.

When we receive any official report or communication from these bodies, or any material for which they become publicly responsible, the common courtesy of journalism obliges us to submit the proof-sheets for correction ; but when, as has more commonly been the case, we have been left in the lurch to fish out proceedings from the daily papers, we have never felt under any obligations to apologize for mistakes which a little official attention could easily have prevented. We have never been asked, directly or indirectly, to advocate any views of the Board or the College, or support any one of their proposed measures.

One of our grievances has been, that officials upon whom we had a claim for information, rarely if ever gave us any, excepting when it was sent in common to the whole profession. So scrupulously careful have some of our official friends conducted themselves, in the fear that they might be suspected of "running the Journal," that we felt we had cause to complain. Official life carries heavy burdens, and we cannot ask the servants of the craft to be its slaves. But there is not a licentiate in Ontario who gets as little information from the Board and the College as the editor. Any one can get answers for the asking. So do we. In no way, directly or indirectly, individually or collectively, have the powers that be in Ontario tried to influence the policy of this Journal. For that much they are entitled to every confidence and respect.

DR. BARRETT'S "ORAL PATHOLOGY AND PRACTICE."

In our next issue will appear a review of the above deeply interesting work by the friend of our Canadian Associations, Dr. W. C. Barrett. It is published by S. S. White Co. at $2.50. and can be obtained through any of our advertisers. We advise every student and practitioner to get it at once.

DENTAL ASSOCIATION OF QUEBEC.

The meeting for the election of a Board of Examiners for the next three years will be held in Montreal on Wednesday morning, the 14th of September. The Secretary will send notice to every licentiate. The Treasurer intends giving the members a full and detailed report.

THE MARITIME ASSOCIATIONS.

We repeat the notice of the Joint Convention of the New Brunswick and Nova Scotia Dental Associations, to be held 1st and 2nd September, at Digby, Nova Scotia. Reduced rates, and a fine programme.

OWING to the late receipt of a number of the photographs to complete the different groups in sets, the balance will not appear until the September issue.

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DISTRICT NO. 2

DR W. E. WILLMOTT, TORONTO
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Dominion
Dental Journal

Vol. X. TORONTO, SEPTEMBER, 1898. No. 9.

Original Communications.

DISEASE AND THE EVOLUTION OF MEDICINE.*

By D. V. BEACOCK, Brockville, Ont.

The text of the following paper was suggested to my mind while taking dinner with some friends in the city of Toronto. The subject of drug medication came up in the course of our conversation. One of the ladies, a dentist's daughter who had just returned from an extended tour on the Continent, asked the question, Do you believe in faith cure? I replied I certainly did, but not in the sense that was popularly understood; not by any means. That the imagination plays some wonderful tricks with the body, no one who has paid the slightest attention to the subject of psychology can for one moment doubt.

But there is a very wide difference in the way in which this is effected. That diseases are cured by direct acts or special providences, I cannot conceive or believe, but that they are cured through the imagination acting in a powerful manner through the mind, I am perfectly willing to admit, as thousands of well authenticated cases too plainly testify. The educated physician knows that the phenomena connected with the nervous system are more wonderful and incomprehensible than any other observed in the animal organism, and but few of them are fully explained by the various theories concerning the nature of nervous substance, and the manner of the transmission of nervous impressions. If we will consider the brain and spinal marrow as batteries generating animal electricity; also the twelve cranial and thirty-one spinal nerves as so many conducting wires by which motion and sensation are respectively conveyed to and from every part of the body, and then consider the great sympathetic nerve, and its independent ganglia and various cords, as being the means of establishing nervous communication between all the different portions of the body, then we shall have a theory by which there is a possibility of conveying sympathic impressions. But why these impressions should be so conveyed to various parts of this intricately woven web of nervous tissue, interfering with their harmonious action, is probably a mystery never to be explained.

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*Read before the Eastern Ontario Dental Association.

A slight investigation into the studies of psychology will furnish us with a key to the mysteries of the wonderful cures said to have been performed by faith cures, Christian Scientists' patent medicine cure-alls, mineral waters, health resorts, shrines, hypnotic suggestion, doctrine of impressions, etc.

When all the different organs of the body are fulfilling their separate duties, performing all their proper functions in relation and harmony with each other, and in perfect condition with their environment our bodies are said to be in a state of physiological equilibrium, that is, in a state of health ; in other words, at ease with all their surroundings. Now, whenever patients seek the aid of either doctor or dentist, it is naturally assumed that they are not in a state of ease, their condition is its converse, viz., disease, which is the general term for any deviation from a normal state of health. This little prefix (dis) expresses a converse or negative force fully, if a man is not honest he is dis-honest, if not able dis-able ; if his body is out of order, dis-order. From this we may easily understand that disease is not a thing or substance, it simply denotes a peculiar state or condition, so that health, or ease, and disease, are merely relative terms, as good and bad, heat and cold, etc., and it seems to me that there is nothing for which self-knowledge is more indispensable in practical life than to enable a person to steer a straight course between these opposite extremes, and to discern clearly the boundary line between right and wrong. For example, too much heat will burn and destroy us, too little will freeze and destroy us, while the proper proportion aids health and life ; so, too much or too little of anything that exists, acts in the same manner. Of some we need more, and of others less, to maintain health. Within the proper amount nothing is poisonous ; out of the proper amount, everything is poisonous. For instance, weight for weight, and equally compressed, the oxygen of the air we breathe is the most deadly poison known to man. Did it ever enter your minds that a troy ounce of pure oxygen will kill more people, and in quicker time, than a troy ounce of any other known substance, strophanthine excepted. Yet we all know that we cannot live without oxygen. Muriatic acid is another deadly poison, and this, too, is a necessity to our existence, being supplied to our system in the form of chloride of sodium, or table salt.

The law of polarity, by which things good in themselves, if pushed to extremes become bad, and every truth develops a corresponding error, is of daily and universal application in all our practical affairs. This applies just as much to the health of our bodies as to our business ; any deviation from the laws of either bring corresponding loss. We know that everything is governed by law, every leaf that falls, as well as every grain of cosmic dust is under the reign of law.

Every violation of the organic laws, brings corresponding suffering both physically and spiritually, every evil word, or thought, or act, leaves its indelible impress on through all time, as well as eternity, just as a scar on the body, no matter how small the wound. This law cannot be too strongly enforced on the minds of the rising generation. Our bodies being formed of mutually dependent parts or organs, anything which prevents due performance of its duty by one part or organ, must react injuriously on all the others.

There was a time when all diseases were supposed to be caused by evil spirits. When a person became sick, it was taken at once to be a case of obsession ; one or more evil spirits were supposed to have taken possession of the victim. At first, in all those cases, they had recourse to priests. Thus we see that the first medicine men were ecclesiastic and their treatment consisted solely of charms, prayers or incantations, coupled, of course, with some rich offerings to the gods. The Old Testament attributes such diseases as the leprosy of Miriam and Ussiah, the boils and hæmorrhoids of Job, the dysentery of Jehoram, the withered hand of Jeroboam, the fatal illness of Asa, and many other ills to the wrath of God, or the malice of his satanic majesty.

Luther, as is well known, ascribed his own disease to "devil spells," declaring that Satan produces all the maladies which afflict mankind, for he is the prince of darkness and death, that he poisons the air we breathe, etc.; but no malady comes from God. So that down to the Reformation there was no sudden change in the theory of medicine from fetishism. In all times, and now among all savages, when very bad spirits are supposed to be in possession of any one of their number, they fight them out with bad odors or very abominable doses. Here we see the origin of "Similia similibus curantur."

It was not till the time of Pythagoras, in the sixth century B.C., that sick persons were visited in their own homes. Previous to that date, when the priests held rule, the sick had always to be carried to the temples to be healed. And it was not till a hundred years later, fifth century B.C., that Hippocrates, the father of medicine, appeared, and quietly but thoroughly broke away from old traditions, developed scientific thought, and thus laid the foundation of medical science upon experience, observation, reason, etc., and his teachings are to-day the most precious of our race. Yet he believed that all diseases had their origin in the four humors of the body, "blood, phlegm, black bile and yellow bile."

One of his greatest merits is that he was the first to dissociate medicine from priestcraft, but his knowledge of anatomy, physiology and pathology was necessarily very defective, as the Greeks precluded all dissection. He was the first to make use of the phrase "Vis Medicatrix Naturæ." Trepanning and phlebotomy was known, but little practised. The pulse was not even spoken of in any of the works attributed to Hippocrates. He attached great importance to diet, etc., medicine, in his estimation, being only of secondary importance, although there were no less than 265 drugs in existence in his time. From what we can learn, Hippocrates was entirely ignorant of the use of nerves, and made no distinction between veins and arteries; nevertheless, he has the distinguished honor of laying the foundation of medical science.

For a long time a battle waged between priest and medicine-man for the mastery. The church was up in arms against medical men for any new discovery, doctors were denounced, charged with sorcery and unlawful compact with the devil. In 1203 the Popes ordered all medical books from the monasteries, and forbade their study. Doctors have been under the ban of the church down to the last part of the last century, for no physician could practise in England without the signature of the Bishop of London to his parchment.

Petrarch called the doctors "men who deny Genesis and bark at Christ." They were called atheists, Mahommedans, sorcerers, magicians, and all other titles likely to embitter the ignorant and superstitious against them. As late as 1722 the Rev. Ed. Massey said that all diseases were sent by Providence for the punishment of sin, and any attempt to prevent them was a "diabolical operation."

And would it not be expecting too much from human nature to imagine that pontiffs, who derived large revenues from the sale of the Agnus Dei, or priests, who derived both wealth and honors from the cures wrought at shrines under their care, or lay dignitaries, who had invested heavily in relics, should favor the development of any science or discovery which undermined their special interests. During a dreadful pestilence in the year 590 a great ecclesiastic made the remark that "pestilences were the harvests of the ministers of God."

As late as 1663, Beecher's "Medicinalis Illustratus" contained, among other equally quaint yet loathsome therapeutics, the following: Powdered human bone in red wine to cure dysentery. The marrow and oil distilled from human bones is good for rheumatism. Prepared human skull is a sure cure for falling sickness. Moss grown on a human skull a hæmastatic. Mummy dissolves coagulated blood, relieves coughs. Human fat, when properly rubbed into the skin, restores weak limbs; and druggists during these times kept in stock, for compounding of physicians' prescriptions, the excreta of human beings and other animals, spirits of human skull, human fat, wolf liver, fox lung, pike's jaw, gall stones, scorpion and centipede ashes.

> "With more of horrible and awful,
> That even to name would be unlawful."

Water in which a single hair of a saint had been dipped was used as a purgative; water in which St. Remy's ring had been dipped was said to have cured fevers. Wine in which the bones of a saint had been dipped cured lunacy. In surgery, the application of various ordures relieved fractures, the touch of the hangman cured sprains, the breath of a donkey cured toothache.

We are inclined to laugh at our ancestors' credulity, because they did not hesitate to swallow such vile decoctions as mentioned above and at the fetish ideas that led up to such abominable forms of medical treatment, but are we entirely free from them? Why sometimes I think that history is repeating itself, even in medicine, for in 1891 we find Drs. Brown, Sequard and Darson Val strongly advocating that the morbid symptoms that depend in man on the internal secretion of an organ, should be treated with the extract of the liquids taken from the same organ in a healthy animal. And have we not Thyroidine from the thyroid gland, Pancreatine from the pancreas, Cerebrene from the brain, Pepsin from the stomach of animals, Testine from the testes, and cod liver oil from the livers of codfish? And many of the old remedies that are absolutely worthless, stick by us still as family heirlooms. Because liverwort has a leaf like the liver it is supposed to cure diseased livers. Bloodroot having a red juice like blood, is considered good for the blood. Eel skin is used for sprains, and rubbing the eye with a gold ring cures hordeolum or stye. Bears' grease is supposed to make the hair grow because bears have a thick coat of hair. Hundreds of people in this age believe in charms to cure toothache and many other complaints, and numbers refuse to wear anything but red flannel, because they believe it to be in some way medicated. Little do these poor deluded mortals think that they are under the thrall of the silliest kind of silly superstition. To show the wonderful effect of the imagination of the mind over disease, etc., it is only necessary to look at the wonderful cures said to have been performed at Lourdes, St. Ann de Beaureport, Treves and other shrines.

Only a few years since the Toronto dailies had several articles describing the wonderful cures by one D. Armstrong by simply laying on of hands, and no less a person than Herbert Spencer dwells upon the fact that intense feeling or passion may bring out great muscular force, and this wonderful power of the mind over the body is well known to every observant student.

Any one who has read that strange but interesting work "Flagellations and the Flagellants," cannot but be impressed with the remarkable cures wrought by the dreadful scourgings and whippings that were so much in vogue during that benighted age. Dr. Campanella of Italy mentions the employment of flagellations as a remedy for the obstruction of the bowels, in the case of an Italian prince, who could not be relieved unless when beaten by a servant whom he kept specially for that purpose. The large amount of blood lost by the poor victims during and after their severe flagellations was often noticed to relieve many diseases, hence arose the extensive practice of phlebotomy or the use of that murderous little instrument, the lancet, now happily "relegated to the realms of innocuous desuetude," but which was once so much in requisition when people begged to be bled every spring for all sorts of imaginary complaints; those morbidly inclined and emotional patients, who take pleasure in their distresses, whom it would be cruel to cure; their pains and aches are their possessions, and any man wishing to make them them well would be little better than a thief or robber; they are those whose chief felicity in this life consists in doctoring and being doctored, and to whom the removal of their bodily ills would be like the death of long-cherished friends.

Coming down to later times we read of the efficacy of the king's touch for the cure of king's evil. King George the Fourth is said to have touched over a hundred thousand persons during his reign, and the gold medals, called angels, issued to the afflicted in one year amounted to over ten thousand pounds. And in William the Third's reign (1689) a patient was brought to him and upon touching him, said, "God give thee better health and more sense," and yet history tells us that this patient was cured notwithstanding William's incredulity.

Let us look further at this doctrine of impressions. Here is the case of a gentleman riding home on horseback from the country; fatigued, weary, and with a severe headache, and so indisposed that he can only just keep his saddle, he is met in a lonely spot by a robber who seizes his bridle and presents a pistol, demanding "Your money or your life." The gentleman puts spurs to his horse, the crack of a shot adds to the confusion and excitement, he arrives home safe, dismounts and to his great surprise finds his headache all gone; the vital force is driven to the extremities, and his hands and feet are warm, he is entirely well! The supreme impression of his mind drove the electro-nervous fluid from his brain—the blood followed it. Now there is nothing strange in this. It is simply the curing of diseases by the doctrine of impressions. Medicines produce a physical impression on the system, but it is always the inherent operation of nature's own sanative principle that cures, the Vis medicatrix naturæ, and just here let me say that, paradoxical as it may appear, disease and Vis medicatrix naturæ are one and the same thing, for disease is only remedial action.

We all are aware that catharsis is often produced by fear. Soldier's fright just before a battle, and student's before an examination, are familiar examples, showing the wonderful effect fear and suggestion has on the mind, how it operates on the muscles, causing them to relax, etc. Often a piece of bad news is succeeded by severe sickness ; and continued anxiety or worry will cause loss of appetite, indigestion, and diarrhœa, thus deranging visceral action, as well as the whole process of nutrition. On the other hand, the physiological benefits of emotional pleasures are still more manifest. Every power, both bodily and mental, is increased by good spirits, and every medical man knows there is no such tonic as happiness.

An emetic taken into the stomach produces secretions most freely from the glands of that organ, from the mucous membrane of the lungs, the glands of the mouth and tongue ; it robs them of the moisture which is continually accumulating upon the stomach, and thus vomiting is produced. The very same principle takes place when cathartics are administered, only the action is downwards instead of the reverse or upwards. Let us suppose, for example, while eating strawberries and cream you tell a sensitive lady that she has swallowed a worm or fly ; she instantly stops eating, turns pale, and in a minute begins to vomit freely. How is this, when neither has been swallowed ? Don't you see the vomiting principle is in the brain. She really believed that she had taken into her stomach what was stated ; she kept her mind steadily fixed intently upon it ; her mind threw the electro-nervous force from the brain to the stomach, which caused it to collapse and this produced the vomiting. Now the vomiting in this case and in the case of the emetic, was occasioned by one and the same thing, and that is the electro-nervous force. The only difference in the two cases is, that the emetic called it from the brain by a physical impression, and the mind forced it from the brain by a mental impression. Riding in a swing, the motion on a vessel, riding in a closed carriage, a fall or a blow on the head will frequently cause vomiting. Thus disease itself being a remedial action, it is simply an effort of nature to expel impurities from the organic domain, and to overcome the effect of their presence. It is a process of purification and reparation. It is nature, the constitution, or the living system at war with morbific agents and abnormal conditions. And this process should be aided and assisted not suppressed nor subdued ; and for this supreme purpose nature requires not poisons but rest, sleep, water, air food, light, etc., each adapted to the circumstances under which she is laboring. Some writer has said that "pain is a guardian angel to turn us from the sensuous Eden of ignorance."

The majority of people are very unphysiological in their habits of eating, drinking, exercise, clothing, etc. They live in such a way as to clog up the outlets of the body, accumulate impurities, obstruct the blood vessels, and oppress the vital organs. They are consequently heavy, dull, torpid, and in a condition to feel the need of stimulants or something to arouse vital action and quiet morbid irritation. And hence they find in the stimulous of alcoholic liquor, and in the sedative influence of opium or some other narcotic, remedies precisely adapted to their feelings; and although these medicines invariably make a bad matter worse—the temporary relief and exhilaration being attributable to a preternatural excitement and expenditure of vital power—the pleasurable sensations of the moment are, in most cases, sufficient to induce the invalid to keep on repeating the doses with increasing frequency until the system has no longer the ability to respond and the vital machinery is in a sad condition of premature decay. And just here, let me emphatically impress this upon your minds: all the dissipation and debauchery in this so-called wicked world originates in the same way.

People have faith in drugs, all the world over, in exact ratio of their ignorance of their nature and *modus operandi.* If it were generally known that all the sarsaparillas, tonic pills and bitters, invigorating cordials, purifying syrups, life balsams, blood foods, nerve strengtheners and matchless sanatives of the world which are running down the throats of the credulous and unthinking multitude, as the rivers run down to the sea, owed all their potency to charm, their virtue to cure and their ability to delude to some combination of stimulants and narcotics, and mainly to alcohol, opium, sugar, etc., they would no more think of seeking a remedy for disease in any of these quack nostrums than they would think of going to a grog-shop for a panacea for all the ills that flesh is heir to.

The advance of science, which is only a higher development of common knowledge, has almost revolutionized all the old fetish and theological ideas of disease. The study of anatomy gave birth to physiology as a natural sequence. William Harvey, a young Englishman, in the early part of the seventeenth century, demonstrated the circulation of the blood, which in those days was supposed to be an exceedingly impious suggestion, as it showed how that man and animals could live without the incessant tinkering of the Almighty to keep them alive. But, strange as it may seem to us in this enlightened age, Harvey, knowing well the prejudices of his profession, dared not publish his discoveries for many years, and it is said that no physician over forty years of age ever acknowledged the truth of Harvey's discovery. From this time, physiology swept grandly on, aided by discoveries in the new science of chemistry. The laws of digestion, respiration, secretion, excretion, reproduction, nervous and muscular action were soon discovered ; then pathology appeared ; this study gave rise to histology, and now followed bacteriology, which, you are all well aware, is making considerable stir in our own ranks. I ought, perhaps, to have mentioned that therapeutics begat materia medica and chemistry, and they, in turn, evolved pharmacy.

Previous to the time of Galen, in the second century, there were several sects always contending with each other ; afterwards these appear to have merged into one, the allopaths, until 1810, when "The Organon of Medicine" was published by Hahnemann, when allopaths and homœopaths began another therapeutic war. Now it was "Contraria contrariis curantur," against "Similia similibus curantur," and which has yet scarcely died out, although bacteriology is fast putting an end to all these narrowly limited views. One thing, our thanks are due to Hahnemann for having sounded the death-knell to polypharmacy and large dosage.

With the advancement of revolutionary thought, the science of medicine has now become an inductive science in many of its different parts. The part known as diagnosis is especially so. No doctor has any magic of finding out what ails a patient, or what his latent tendencies are. He must get his facts just as a detective does who wishes to run down a criminal, and the more facts he gets the more likely he is to be right in his conclusions. The great mass of people to-day still believe that doctors have some magic way of getting at a knowledge of disease, and a miraculous way of curing. They are praised for things they never do, and blamed for results of which they are entirely innocent. Where their work is most laborious, and their anxiety most intense, their pay, as a rule, is abuse only ; every physician and dentist has this experience without exception.

Medical men as well as dentists, stand alone, among all others, striving with might and main to extinguish their own business. They preach temperance, virtue, and cleanliness, know full well that when the people come to follow their advice their occupations, like Othello's, will be gone ; they establish boards of health to arrest the spead of disease, while they are well aware that such sanitary measures steal money from their pockets.

Dentists are doing the very same thing in their profession, establishing dental colleges, dental hospitals, for the benefit of the poor, and using every means in their power to educate the people up to preserving their teeth, preventing dyspepsia, with its long train of diseases which invariably follow. This they do knowing that the more their teaching is followed, the less money they will be able to make.

And now let me conclude this paper by stating that it has often been said that dentistry has not received that recognition from doctors that it merits. If dentists in future study and fit themselves as become their profession, making themselves thoroughly conversant with the science of dentistry in all its various branches, especially anatomy, physiology, pathology, and the laws of health, they will soon become indispensable in aiding physicians in the cure of many intricate oral diseases and operations, which are at present sadly neglected. This will compel recognition, without the asking or begging. Dentistry, it must be remembered, is very young, and although, like the medical profession, there are black sheep in our folds, we have made greater advancement in fifty years than the medical profession did during two thousand. This of itself is something for the dental profession to feel justly proud of. It has proved itself quite capable of standing alone, it has outgrown its swaddling clothes, and has no occasion to stand at the door of medicine and knock for admission. There is a work for both to do ; let them work together, hand in hand, like Siamese twins, to ameliorate the martyrdom of man, and thus help to remove that ignorant and superstitious belief, that disease and suffering are all the result of Mother Eve being over-anxious to obtain a little oxtra knowledge by the eating of an apple. For all this there is but one remedy—wisdom, and this is, as Prof. Huxley wisely says, the only medicine for suffering, crime, and all other woes of mankind. Then let us study and think and investigate for ourselves; cultivate the brain, that wonderful organ of the mind—the crowning work of all the Creator's grandest creations.

A CONTRIBUTION TO THE AMALGAM QUESTION.*

By W. Geo. Beers, L.D.S., D.D.S., Montreal.

Were it possible to produce infallible facts, that would admit of no two opinions, as to the contraction and expansion of amalgams ; if we could agree on these questions, as we are forced to agree that two and two make four, there would still remain a phase of the subject practically and morally transcending them all. Supposing we found a positively perfect amalgam, having no physical objections of color, contraction, or expansion, we would still have to face the antiquated creed, born in the dark age of American dentistry, which condemned all amalgams because of the presence of mercury. Anyone familiar with the history of the controversy of 1842, and the symposium of infinitesimal silliness which was carried on by the anti-amalgamites at the time, may be surprised to learn, that coincidently with the scientific experiments of Dr. Black and others, a Boston dentist, a homœopath of the extremest dilution, aided by several medical men and laity of the same or a similar school, has resuscitated the same old scarecrow, with the same old war-whoop, and the same vague, illogical and unscientific vagaries, which agitated our forbears over half a century ago, and which were repudiated by the large majority.

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* Read before the Eastern Ontario Dental Association.

The article to which I refer occupies twenty-four pages of the journal in which it appeared, and is not only based upon extreme private homœopathic opinions, but upon one of those epidemics of homœopathic opinion which so often, in our experience as dentists, we have known to be utterly unreliable. The writer refers, with remarkable devotion, to "the objections urged by so many physicians"; but if the expressions of such opinion which he publishes are to be the guide for our estimation of their value, we need not concern ourselves, as not one of them bears the impress of logic or correct diagnosis, while more than one exhibit a homœopathic hodge-podge, which read like quack medical advertisements. We are under very many obligations, to the expert opinions of the medical fraternity, on points of diagnosis or practice which touch the borderland of their own operations and experience; but there is nothing more humiliating to well-informed dentists, than the habit which some of our confreres have of admitting, that their practice of many years has been nothing better than experimenting in the dark, and that they must accept as *ex-cathedra* the opinions of medical men on questions wherein the latter depend upon pure conjecture. There are occasions when dentists need to consult the general practitioner; but in reference to the best way of practising and prescribing for the average pathological conditions of the teeth, the opinions of the dentist should be, and are, paramount, especially when the opinions adverse to our practice are the outcome of a small class of one school, and pronounced by writers whose inconsistency with their own principles are glaringly exposed. One of the correspondents of our author, styling himself a "belligerent victim," specially swears at all dentists who use amalgam, and specially extols the author who does not; calling the former "fools and knaves," "fit to be in a lunatic asylum," "impostors on the public," and "frauds"; and generally reveals himself as a belligerent fool. It is never pleasant and rarely popular to criticize with any appearance of harshness, yet often it is necessary. If it is ever justifiable, it is when men set themselves up as of superior clay, and censors of a practice common to the profession at large—a practice which, like all others having limitations, has been approved by the best teachers, thinkers, and experts in the profession. It is no argument against the use of a material for filling teeth to prove it is abused. Doubtless, too much amalgam is used, but doubtless it is mostly the fault of the patient, who cannot, or will not, pay for gold, and dentists cannot afford to insert gold for the fun of the thing. The financial argument is unanswerable. If I had my way, for instance, I would rarely ever use vulcanite. As a non-conductor, and a fluid and odor absorber, it is the worst base we possess. It has many objections, like shoddy cloth and departmental millinery, but the financial argument appeals in the use of vulcanite as in that of amalgam.

If, however, it can be proved that amalgam and vulcanite are injurious, the financial argument must be abandoned, and we and the public must take the consequences. But we must have something more accurate in the way of "proof" against them than *ex parte* statements; the crazy heroics of "belligerent victims"; the conjectures and dreams, which prove nothing, and which admit nothing can be proved. It is a very serious assertion to make that we are imposing on the public. It is a very modest pretension, is it not? that the only non-poisoners in the profession are those who do not use amalgam. The author of the paper to which I refer, admits (to use his own words) that "to furnish any 'scientific proof,' in the ordinary sense of the phrase, of the injurious effects of amalgam fillings, is quite impossible; nor do we as dentists really need any such proof." In an erratic way, he rattles among the dry bones of the most absurd parallels, and reminds one of the nonsense talked by Christian Scientists and such cranks about "instinct," "deep-seated conviction," which are offered in lieu of experimental proof and deep-seated common-sense. To quote one of many specimens of his arguments: "The writer of this paper makes no claim of having scientifically *proved*, in the common acceptation of the phrase, that amalgam fillings are often a source of evil, or that the question is one that admits of such proof. He merely makes the claim of having *abundantly proved to his own satisfaction*, during the past seven or eight years, the fact that they very often are a source of harm—such proof resting, to a considerable extent, of course, upon what we have seen is necessary in any consideration of the question, to wit, the *conscious*, *personal experience* of others."

For unmitigated rot, I commend the above as a model. I do not think it necessary to follow the author and his satellites through the fogs of such pseudo-science and false logic. Were it not for the fact, that the "*conscious, personal*" susceptibility of the public is easily startled into serious alarm by the most nonsensical cry if it is sufficiently proclaimed, the theory would not be worthy of a drop of ink. All the ills of life, we are told by just such cranks, come from the use of meat, salt, pepper, tea, coffee, etc. A class of skeptics is bred, a prey to all sorts of fads and fevers, whose stomachs turn if they taste the millioneth part of a cucumber, or point a fork at an early radish. The realms of medical and surgical practice are full of such biographies of bigotry and idiocy. Vaccination alone has been and still is accused as the cause of disease, as the parent of blotches, rashes, erysipelas, suppuration of the glands of the neck—all of which were due to a pre-existing tendency. It would be wearisome and unprofitable to recall such analogies. Weak-minded people are susceptible to all sorts of mental impressions—the people who make fortunes for quacks; they are as easily possessed of the amalgam devil when it is set on its legs as of any other demon.

What has chiefly led to the cry against amalgam? Precisely in 1898 what roused so many in 1842: the fact that it is used by quacks indiscriminately, with faulty manipulation, faulty preparation of cavities, faulty preparation of abscessed roots. It is used as a hasty stop-gap, as a last resort, often, in teeth which are pathologically unfit for any filling. Most of its failures are those of manipulation. To crown all, like vulcanite, it is cheap, and this is its curse, in one sense.

But what of the mercury in it? When it is properly prepared and hardened it loses all mercurial properties. The fact that mercury enters into its composition is no more evidence that it will produce mercurial effects, than that the muriatic acid in common salt will decompose meat when applied to it. The law of affinity protects both the mercury and the muriatic acid from any injurious consequences when united with the other materials. The mercury is held by this law so firmly by the other metals, and is so completely incorporated with them, that it is no longer mercury, but forms with the other metals which are united with it, a new metal, chemically compounded. To obtain any mercurial effects, we must obtain from the hardened amalgam an oxide, or have it combined with an acid. How can the separation be effected? By heat, or by dissolving the paste in strong nitric acid; but either process would destroy life, for it requires a heat of 700° before silver can be forced from its union with mercury, and an acid of such strength that the tooth and surrounding parts would be destroyed long before the paste was dissolved.

If mercurial vaporization enters the circulation through the lungs, the infinitesimal amount can do no harm; but any mercury that vaporizes in the temperature of the oral cavity, would remain vaporized and pass out by the expiration, as it went in, a vapor.

I regret that I have had to run these remarks together in a very hasty manner, as I intended to give a talk instead of a paper. The revival of the question meets us face to face. If we are using poison, let it be proved; then let it be anathema. But let us not lose the courage of our convictions, every time a crank yells a war-whoop of self-praise conjoined with the condemnation of the practice of his confreres.

MEDICO-DENTAL RELATIONS.*

By Mark G. McElhinney, L.D.S., Ottawa.

When your secretary asked me to prepare a paper for this meeting I assented. Fate so ordained that it be written under difficulties, the greater part on the train between Montreal and Providence and the balance to-day on board the *Gladys* at Newport, R.I.

The smell of the salt water, the rattle and animation of numerous craft and their crews and the general tone of holiday-making are not very conducive to the consideration of serious professional questions. However having promised, something must be done in fulfilment.

The relations that should exist between sister professions form a very interesting subject for thought. Those existing between medicine and dentistry, while ever improving, are not the best that could be desired. The proverbial conservatism of medicine and the recent origin of dentistry have been to a certain degree incompatible. Medicine has been slow to recognize dentistry as a specialty of the healing art, and dentistry has resented this lack of recognition. In the course of evolution each profession passes through certain phases, not always well marked but none the less inevitable. There is that early period of mystery, which means ignorance, then arises a dogmatic empiricism which is as unthinking as it is cruel. Slowly comes the dawn of intelligent action founded upon individual observation and reasoning, action that is decisive without cruelty and uniform without dogmatism. The fault of all dogmatism is that it is based upon generalizations that are more or less arbitrary or at least too limited. Medicine and dentistry have not completely emerged from the empirical phase. The more obscure and difficult the basis the more given to rules will the profession be. Medicine is a difficult study, subject to numerous and ever-changing conditions, the mastery of which is beyond the power of any one individual.

As the majority in any profession is composed of individuals more or less unfitted by nature and training to the duties thereof, it follows that this majority must always be dependent upon fixed rules rather than upon the result of trained observation. In the immediate relations under discussion much that is undesirable is the result of this principle. There is great scope for improvement which can come only through intelligent discussion. In my opinion, dentistry is a specialty of medicine as important and as intricate as that of the oculist, aurist or other specialist. To successfully practice dentistry requires as a basis as well grounded a knowledge of general medical subjects as do any of the others.

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*Read before the Eastern Ontario Dental Association.

Dentistry shall not have attained its proper status until every practitioner possesses the degree of M.D. or is provided by his college with its equivalent. I am aware that the course in dentistry even at present comprises that necessary knowledge. But how can the medical profession and the general public be so informed that they may appreciate the dentist at his actual value as a professional man? This recognition must come chiefly through the physicians by their recognition of the dentist as an equal and a co-worker in the healing art. It were better for this movement to take place on the part of the physicians, but to whom are we to look, and how long shall we wait for the man of the hour who is to bring to pass this desired result? Experience has shown that such a movement cannot proceed from above downward, it must grow out of its own inherent strength and desire a natural evolution from below upward. The dentist must deserve, demand, and make good his claim for recognition.

Too many physicians of a lower order are apt to treat the subject of dentistry with a supercilious sneer. Who is Dr. Blank? Only a dentist, a tooth-puller, forgetting that the reproach of "sawbones" is not yet entirely removed. Some dentists are undoubtedly ignorant, some bunglers, some quacks. Is medicine never open to similar charges? I have seen physicians make grave blunders in the administration of chloroform. Physicians have been known to apply a poultice to the external surface of the cheek for alveolar abscess. Physicians have treated patients for indigestion year in and year out without discovering that the stomach was not provided with teeth. The close relations between dental conditions and the general organism are so important that they deserve much attention upon the part of both professions. The physician and the dentist should work together in complete harmony for the relief of human suffering.

The duty of the physician is clear. He should acquaint himself fully with the bearings of dental conditions upon the general system. He should acquire knowledge of the scope and possibilities of dentistry in dealing with those conditions. He should call in the aid of a dentist when such is desirable and thus make his own efforts more likely to be successful.

Indigestion is a difficult and unsatisfactory disease to combat, because it is of a secondary nature and depends greatly upon derangements of other functions. Impairments of the eliminating functions of the skin and kidneys through exposure to cold, impairment of the functions of the liver, which is the sewage collector of the body, obstructions and irritation of the intestines through lack of time and careless habits are all fruitful causes of indigestion, but the prime cause in otherwise healthy individuals is the projection into the stomach of improperly masticated and unsalivated food.

The stomach has no teeth, neither is it provided with any apparatus analogous to the gizzard of a fowl. It cannot break up large portions of meat or force its juices into solid masses of starchy, fatty, or albuminous matter. The consequence is, that it rebels, refusing to do its duty, and passes such matters on in a crude and undigested state to be again rejected by the organs of assimilation, and to present a continual menace to the delicate structures with which it comes in contact. It is the duty of the physician first, to see that his patient can get the proper and necessary food, and next, that the patient can properly prepare that food for digestion. Small efficacy is there in the treatment of any disease if the prime cause be not first removed or at least the contributory condition ameliorated.

That the foremost physicians have recognized the claims of dentistry is indicated by their utterances on the subject. The difficulty is in impressing our ideas upon the rank and file and through them upon the general public.

T. Lauder Brunton, in his excellent work on the "Action of Medicines," says: "If you can supply the missing function and bring it up to the mark, you will increase the length of time during which the whole organism will go on, therefore attention to the teeth is often a way of prolonging life, and it has been said, and with a great deal of truth probably, that the great increase in longevity of late years is really due to the dentists who supply teeth to those who otherwise would not have them. I think it is almost certain that this increase is due to the simple fact that people can continue now to masticate their food for a very much longer period than before." Such an opinion from a man of Brunton's standing in medicine should convince the most skeptical of the great value of the dentist as a professional man.

Apologizing, gentlemen, for the brief and straggling nature of this paper, I thank you for your kind attention and shall for the next few weeks forswear the study of disease and give my attention to the more pleasant occupation of navigation.

TEMPORARY SETS OF ARTIFICIAL TEETH.*

By R. E. Sparks, M.D., D.D.S., L.D.S., Kingston, Ont.

This is a question which does not receive the attention from the profession it should, consequently is not appreciated by the public as it should be. Such questions as the following reveals the ignorance on the part of those who contemplate wearing artificial teeth: "Do you lend a temporary set?" "Have you any temporary sets on hand?" "Have you a temporary set I could wear until my gums are healed?" Being informed that it would be impossible for a patient to wear a set of teeth which had not been made expressly for the case in hand, we are asked, "Do you charge anything extra for that?" Some practitioners give their patients to understand that anything is good enough for a temporary set and that very little need be expected of it. These are they who lend or make a temporary set at a very small cost to the wearer.

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*Read before the Eastern Ontario Dental Association.

We frequently hear from patients who apply for permanent sets, that they had temporary sets but never wore them.

Some practitioners discourage the use of temporary sets, assuring their patients that by waiting a few weeks or months they can have a permanent set. So we see many wearers of artificial teeth with features distorted, gums flabby, flaps of unhealthy mucous membrane drawn down into the spaces left by absorption of the alveolar process after the insertion of the artificial teeth. So we desire to consider for a few moments the following questions: Are temporary sets of artificial teeth beneficial? Why? How may they be made to give the wearer most comfort and benefit?

I take the ground that temporary sets are beneficial, if made so they may be worn with comfort. First, the patient has the use of them for mastication, and this most important to the individual with weak digestive powers, whether hereditary, or caused by continued overstrain by loss of masticating organs. Secondly, articulation. This is also a very important consideration to persons who sing or speak in public. Thirdly, personal appearance. This is no small consideration to ladies, particularly those whose duties bring them much in contact with the public. Fourthly, as a protection for the gums. Instead of temporary teeth being an irritation to the gums made sore by extraction of the teeth, they protect the gums from injury, from contact with hard substances of food and from the teeth in the opposite jaw, where such exist. Fifthly, temporary sets fill the gaps where any extensive bridging is to be done, but where it may be necessary for any reason to postpone the operation. How they may best be made for the comfort and benefit of patient.

Where I can do so, in the case of upper sets I prepare to extract the molars and second bicuspids some weeks before I insert the temporary set. The greatest shrinkage takes place during the first few weeks. I leave the front teeth for appearance and use, where they are of any use for mastication. Ladies who occupy public positions object to being left without any teeth whatever. When the gums, where the molars and second bicuspids have been extracted, are healed and the sharp points absorbed, I extract the remaining teeth and take the impression at the same sitting. Where the teeth have been out for some time I allow rubber to pass up over the gums. Where the teeth have just been extracted I grind the tails of the artificial teeth to fit into the sockets left by the recently extracted teeth. This method anticipates the absorption of the alveolus. I have often seen temporary sets of teeth put in on this principle, fitting as well, after having been worn two or three years, as others which had been worn two or three months, but had been put in on the ordinary principle. This is not always feasible where an anæsthetic is administered unless it be gas, which may have to be administered twice or more times. The advantages of inserting temporary sets upon this principle are many. It gives them a very natural appearance, looking as if the teeth had grown out of the sockets. After the outer wall of the alveolus is absorbed the tails of the teeth set closely to the ridge. By this method one may, with considerable accuracy, take the impression and make the plate before extracting the teeth. To do so, cut the teeth off the plaster cast, make sockets sufficient to recive the tails of the artificial teeth. This is particularly appreciated in cases of partial sets, as the teeth can be extracted and artificial set inserted at the same sitting. But supposing for some reason, for instance chloroform be administered, the teeth must all be extracted at the one sitting, I would recommend that the gums be given a few weeks for absorption to take place. Then, as in the other case, I would have the artificial gum pass up over the ridge as far forward as the second bicuspid. The front teeth I would grind to fit the gum. That the tails may fit very closely I shave the cast where the teeth come in contact The advantages of this method over having a gum of whatever material are various.

An artificial gum under the lips, just after the teeth have been extracted, will in most cases make the mouth appear too full. The ridge being prominent, the artificial gum of whatever made is almost certain to show, and as it is seldom feasible to use gum teeth, vulcanite is used and looks very unnatural. But a far more serious objection than these presents itself and forbids the general use of gums over the anterior ridge of the upper jaw in the case of temporary plates. If worn for any considerable time after the gums are absorbed, the ridge becomes flabby and the mucous membrane of the lip becomes drawn into the space between the plate and ridge. Why this should occur at the front of the mouth and not at the back, and in the case of the upper and not in the lower, I am at a loss to say. In the case of temporary lower sets I usually cover the ridge entirely around with vulcanite and use plain teeth. The lower jaw being less prominent than the upper, the projection of lip caused by a thin layer of rubber is not so observable. The lower plate having to depend for retention upon its contact with the ridge, unlike the upper set which has the palatal contact, makes a gum all the way around more desirable.

As much care should be taken to secure a good articulation as in the case of a permanent set. As to the length of time it may be well to advise a patient to wear a temporary set, no rule will apply. I recommend the wearing of them as long as they are retained well and used with comfort, but warn the wearer against wearing them after they become loose and uncomfortable. I always expect a well fitting temporary plate to be worn a year. By that time I expect the gums to be in a good condition for a permanent set. In the spring of 1875 I made a temporary set of teeth for a lady three weeks after having extracted her upper set. About two years ago I saw her and she was still wearing it with comfort for twenty-one years. She had then lately lost off the central incisors. She said she would have them replaced by others on the some plate, as it was all right and she did not know what she might get next time. So I suppose she is wearing them yet.

The wearing of a temporary set overcomes the desire for a permanent set before the gums are ready for them, as is so frequently the case where temporary sets are not worn.

As regards the fee that should be charged for temporary sets, that could no more be regulated than could the fees for permanent sets, or for any other operation. There is no reason why a temporary set of teeth should be made any cheaper than a permanent set, or that a temporary and permanent set should not be twice as much as either one, especially when extraction of the teeth is regarded as a part of the operation. But there seems to be a sort of retail and wholesale principle observed, that two sets shall cost less than twice as much as one set. This being the case I make it a rule to have the retail fee for the first set. This insures me the making of the permanent set if the temporary set have been satisfactory and the patient be within reach. It insures me against loss, if for any reason the patient should get the permanent set elsewhere.

Question Drawer.

Edited by R. E. SPARKS, M.D., D.D.S., L.D.S., Kingston, Ont.

Q.—42. In articulating full upper and lower sets on extremely absorbed alveolar ridges is there any advantage in elongating the molars?

A.—1. In cases of extreme resorption of the alveolars two very important points must be kept in view in designing artificial dentures—comfort and appearance. The molars should be comparative with the length of the rest of the teeth. The appearance of the face may be improved by lengthening the teeth, but it is more than likely that comfort will be sacrificed, as the shorter the teeth the less likely are they to be displaced.

2. Have the bearing on the bicuspids and molars. W. B.

3. If lower plate, yes. If upper, no.

4. First set up the two front sections above and below to touch each other. Then interpose the bicuspids and molars just sufficiently to keep the front teeth from touching.

Q.—43. To what membrane was the term "persistent" applied?

A.—1. Pupillary membrane.

Q.—44. Explain which makes the cleanest and strongest flame for annealing gold, methylated spirits or pure alcohol?

A.—1. Alcohol. W. B.

2. Methylated spirits. It contains less carbon and burns with non-luminous flame, while alcohol has slightly luminous blue flame with an atom more of carbon. J. E. OVERHOLT.

3. Alcohol because it is a pure spirit, usually about 95 per cent., while methylated spirits contains a gummy substance and leaves a residue from burning. Alcohol burns completely, leaving no residue.
A. A. SMITH.

Q.—46. In Dr. Black's experiments with amalgam fillings at the recent meetings of the O. D. S. at Toronto, it was found that out of thirty-five fillings inserted in cavities in steel dies, only seven were perfect enough to have preserved teeth in the mouth. Many of the imperfect fillings were made from alloys which have been in use in the dental profession for a great many years. How may we account for the preservation of teeth which we know have been preserved by fillings made of these imperfect alloys?

A.—1. A short and correct answer would be because the conditions are not the same. A scientific explanation would be as follows: Experiments teach a lesson well backed by facts in the physical line of study in which Dr. Black is engaged. The question, "How may we account for the preservation of teeth which we know have been preserved by fillings made of these imperfect alloys?" calls for an answer outside of physical studies. The conditions are changed. As we have had occasion to say before, experiments in the laboratory do not stand upon the same plane as operations at the chair. In a paper written upon this subject over twenty years ago, we illustrated the difference between amalgam and gold in about the following language: "Those who have had experience in the removal of remains from cemeteries have observed that in cases where caskets have been in the ground for many years, the only remaining wood is found in contact with the metals, as plates, screws, mountings etc. Metallic salts enter wood fibre and with it formed an insoluble compound like the metals, negative to decay. This principle is carried out in case of an amalgam filling. A cavity lining is formed from metallic salts with the organic constituents of the tooth, and thus decay is arrested. To return to the casket illustration, should mountings or screws be made of gold or platinum, in time the metal would be found bright and free from any wood attachment. The physical lesson is this: Dr. Black's statements would apply to gold fillings; as all imperfect gold fillings fail to preserve teeth, because gold imparts no salts to compensate for poor work. While amalgam does as the questioner has observed. S. B. PALMER, Syracuse, N. Y.

2. 1st. Any filling that properly preserves a tooth against caries maintains the walls of the cavity bright and perfect, whether the filling be of gold or amalgam. Many very imperfect fillings remain in cavities in mouths in which the disposition to caries is slight or nil, and would appear to be preserving such teeth. There are a large number of such cases in middle-aged people, which if in the mouths of people in whom there was a marked disposition to caries would very soon disappear. 2nd. In the mouths of people in whom there is considerable intensity of carious action, the amalgam fillings of the past disappear, or fail to preserve the teeth from caries, in larger proportion than the faulty fillings appeared in my test tubes, that is, in five to seven years. A black ditch occurs around the filling, or about some portion of its margin, decay begins again, and finally the filling is lost. This is very clearly shown when careful records are kept noting conditions, but to the general profession who do not keep careful records and continually consult them, these facts may not seem clear. In our work records ought to be continually consulted for years together to obtain just estimates of the value of filling materials. Most dentists do not do this and seem to regard as successful any fillings that remain in the teeth two or three years irrespective of conditions. This gives false notions generally. An amalgam filling that is really successful preserves the margins of the cavity without discoloration of the dentine or enamel walls the same as a gold filling. The amalgam may be ever so black on the surface but the tooth should be bright. What proportion of the fillings made from the silver-tin amalgams of the past do this? Copper amalgam will do it, when it doesn't wash out. Why not other amalgams? The copper amalgams do not shrink, the silver-tin amalgams of the past do shrink, causing them to leak, therefore the tooth is discolored. Count up the silver-tin amalgam fillings made in the past that have not discolored the walls of the cavity and you will find those amalgams that were perfect enough for use at the time they were employed.

G. V. BLACK.

Proceedings of Dental Societies.

EASTERN ONTARIO DENTAL ASSOCIATION.

The nineteenth annual meeting of the Eastern Ontario Dental Association was held in the parlor of the St. Lawrence Hall, Brockville, on July 14th and 15th, 1898.

The meeting was called to order by the President, Dr. A. H. Weagant, at eight o'clock p.m. of the first day.

The following members were present: Drs. W. R. Green, W. A. Leggo, C. A. Martin, J. C. Bower, J. A. Armstrong, G. Hutchison, Ottawa; H. B. Weagant, Morrisburg; W. Brace, D. V. Beacock, R. T. Kenney, Brockville; R. E. Sparks, L. Clements, Kingston; W. B. Cavanagh, Geo. H. Weagant, Cornwall; V. H. Lyon, Alexandria; W. McGill, Dixon; J. Young, A. H. Weagant, S. Burns, Smith's Falls; A. H. Mabee, Gananoque; G. E. Hanna, J. A. Sanders, Kemptville; S. W. Frith, West Winchester.

President Weagant, in a few appropriate words, opened the proceedings, and then called on Mayor Downey, of Brockville, who, after making some introductory remarks, read the following address of welcome:

To the Eastern Ontario Dental Association:

GENTLEMEN,—The mayor of a town like Brockville has many duties to discharge which are irksome and distasteful, but he has also many pleasant duties, and among these possibly the most enjoyable is welcoming to our fair town associations like yours that have honored us by making our Island City their meeting place.

Gentlemen, on behalf of the citizens of Brockville, I bid you hearty welcome to our town. We feel that your profession is entitled to honor and respect as being one of the humanitarian professions, and one which does good to mankind. The steady progress which is always being made by you, and the readiness with which the discoveries of modern science are turned to good account by you, amply demonstrate that your profession numbers in its ranks many men of reading and research who have the ability to turn to practical account the marvellous discoveries and inventions of our day.

I am proud to say that we have had, and now have, representatives of your profession in our town who are a credit alike to you and us.

Gentlemen, I am pleased that you have come amongst us at this pleasant season of the year when the beauties of scenery, which nature has so bountifully bestowed upon us, are most apparent, and men of observation, such as I am sure you are, will soon notice in our town the evidences of enterprise and industry. While we have factories and manufacturing establishments, we have also excellent systems of waterworks and sewerage, and electric light and gas, and splendid fire and police protection. We are rapidly putting down granolithic sidewalks, and claim that in all municipal work we are equal, if not superior, to any town of our size in Canada.

The claims of the sick poor have not been overlooked. Our sympathies for suffering humanity have been moved, and we now boast, and feel proud, of having two first-class modern hospitals well equipped with all modern appliances, and attended by devoted and well trained nurses. Visitors are welcome to visit these as well as our other public institutions, and I most cordially invite you to visit our public buildings and places of interest.

Gentlemen, I trust that your stay amongst us will be profitable and enjoyable, and that the interests of your profession will be promoted, while at the same time you spend a few pleasant hours in recreation and enjoyment. Once more I bid you welcome to Brockville.

Before resuming his seat, Mayor Downey, on behalf of the Rowing Club, extended an invitation to the members of the Association to attend the hop at the club-house.

The Mayor's address was replied to by President Weagant, Dr. Sparks, of Kingston, and Drs. Martin and Leggo, of Ottawa, the last two mentioned of whom are old Brockville boys, having been born and raised in this town. They referred in kindly terms to the interesting days they had spent here, and eulogized the town for the progressive spirit of its people, and the many evidences of prosperity everywhere to be seen.

Drs. A. E. McCordick, of North Gower ; J. A. Fleming, of Prescott, and R. L. Graham, of Brockville, were elected members of the Association, and Dr. McLaren, of Toronto, was proposed as an honorary member.

The retiring President read his address, in the course of which he briefly sketched what had been done during the year in the way of advancing the interests of the profession, and closed by thanking the members for their kindness and consideration towards himself in the year he had the honor of occupying the position of president.

The Secretary read a letter from Dr. S. A. Ackroyd, of Kingston, regretting his inability to be present. The doctor was down on the programme for a paper on " Hard Times," but he had not had time to properly prepare it.

The next item on the programme was a carefully prepared paper by Dr. W. Fred. Jackson, of Brockville, on the " True Status of Alcohol in Medicine," which gave rise to an interesting discussion, in which Drs. Leggo, Sparks, Martin, Green and Hanna took part.

A vote of thanks was tendered Dr. Jackson for his valuable paper, and the meeting was adjourned until the following morning at half-past nine o'clock, when the first order of business was the election of officers for the ensuing year, which resulted as follows: President, Dr. W. R. Green, Ottawa; Vice-President, Dr. J. A. Armstrong, Ottawa; Secretary-Treasurer, Dr. Geo H. Weagant, Cornwall.

A paper by Dr. Beers, of Montreal, "A Contribution to the Amalgam Question," was read. Dr. Beacock, of Brockville, gave a paper on "Disease and the Evolution of Medicine."

Both these were very able and thoughtful papers, and their reading and the discussions which followed took up the whole time of the Association until an adjournment was made for dinner.

The afternoon session opened with an interesting report of the proceedings of the Board of Directors of the Royal College of Dental Surgeons, by Dr. Hanna, of Kemptville.

Some discussion took place showing a general feeling in support of the proposed new legislation by the National Association of Faculties, which met in Omaha last month, extending the term of studentship to four years and the college course to seven months. The Ontario dentists are affiliated with this Association, being entitled to send one delegate, who will be Dr. Willmott, a member of the Board of the Royal College of Dental Surgeons. In the absence of Dr. McElhinney, of Ottawa, Dr. Lyon read his paper on "Medico-Dental Relations," and the discussion which followed was opened by Dr. Sparks, Kingston.

The last mentioned contributed an able paper on "Temporary Sets of Artificial Teeth," which was discussed by Dr. Armstrong and others.

"Friction Plates" was the title of a paper read by Dr. G. H. Weagant, Cornwall, which created a favorable impression.

Moved by C. A. Martin, seconded by W. Brace, that the sympathy of the Eastern Ontario Dental Association be tendered the friends of the late Dr. J. H. Clark in their bereavement.

Dr. Clark was one of our charter members. He once occupied the chair of vice-president. His name was proposed for the presidency repeatedly, but he as often declined. He was a regular attendant at our meetings, quiet and unassuming, but highly interested in the welfare of the Association. In the death of Dr. Clark the Association feels keenly the loss it sustains.

Further resolved, that a copy of this motion be forwarded to the friends of Dr. Clark. Carried.

Moved by R. E. Sparks, seconded by L. Clements, that the members of the Eastern Ontario Dental Association here assembled having learned with sincere regret of the serious illness of Dr. Parnell, of Ottawa, hereby express their sympathy with him in his affliction.

Dr. Parnell was a charter member of the Association. He was our first secretary-treasurer, and has occupied the president's chair. He has always supported the Association financially and by earnest effort. That he may be sustained in his illness and speedily recover, is the sincere wish of the Association.

Further resolved that a copy of this resolution be forwarded to Dr. Parnell. Carried.

Dr. Stanley Burns made and successfully inserted a gold crown by a process entirely original.

Kingston was proposed and accepted as the next place of meeting.

The convention adjourned shortly before four o'clock to accept the invitation of the resident dentists to a complimentary trip up the river on the steam yacht *Albani*, kindly loaned for the occasion by Wm. H. Comstock.

The delegates were accompanied by Mayor Downey, Dr. Horton, Dr. Jackson, Dr. MacAulay, Dr. L. Vaux, G. I. Mallory and several ladies. After a pleasant run up the American channel the party, numbering about forty-five, were landed at Alexandria Bay, where they disembarked at 6.30, and were entertained to supper half an hour later at the Marsden House, a commodious new hotel recently built. After the wants of the inner man had been fully satisfied, an interesting episode took place.

Dr. Sparks, Kingston, arose from his chair and intimated that he had a pleasant duty to perform, which would explain itself as he proceeded. He then read the following address:

To George H. Weagant, Secretary-Treasurer of the Eastern Ontario Dental Association:

SIR,—The members of this Association desire to express in some tangible form their appreciation of your efficient services as secretary-treasurer during many years of our existence, as well as our high esteem for your personal and professional worth. We realize that the success of the E. O. D. A. has been largely due to our untiring and well-directed efforts not only as a secretary, and your occupancy of the presidential chair, but the whole period since our organization. We request that you accept this cane not only as an evidence of your official service, but principally as a token of personal esteem. May you be long spared to enjoy its use and be reminded thereby of your many warm friends and admirers in the E. O. D. A.

Signed on behalf the Association,

G. E. HANNA,
W. BRACE,
R. E. SPARKS,
J. C. BOWER.
G. C. HUTCHINSON.

Dr. Bower, Ottawa, made the presentation of a handsome gold-headed cane suitably inscribed.

The recipient, who is one of the most jovial and popular members of the Association, was received with great applause when he commenced to reply. He was evidently greatly taken by surprise, but made a modest reply in which he said he was glad to know that his services had been appreciated. He always considered his work more of a pleasure than a duty. He heartily thanked the donors for their gift.

The health of Dr. Weagant was drunk right royally, accompanied with the singing of " He's a Jolly Good Fellow," and three rousing cheers.

The visitors were allotted half an hour to take in the sights of the place, and, leaving at 8.30, Capt. Young steamed up the river about two miles, which afforded a splendid opportunity of witnessing the illumination of the bay and the adjoining islands. Brockville was reached on the return trip at 11 o'clock, all well pleased with the outing, which proved a most enjoyable one in every respect. Many of the delegates had never been on the St. Lawrence before, and it is needless to say they were delighted with the scenery.

Dr. Chas. Martin, of Ottawa, who is a jovial spirit, kept the company in good humor with his stories and recitations, and many others contributed in a similar manner.

GEO. H. WEAGANT, Secretary.

A CANADIAN'S IMPRESSIONS OF THE ILLINOIS STATE DENTAL SOCIETY.

It was my fortune, in company with Dr. J. Frank Adams, to attend the State Dental Society meeting held at Springfield during the second week in May last. So pleasant are my recollections of that meeting that I beg the privilege, even at this late date, of recounting some of our experiences.

Passing through Chicago, on our way to Springfield, we spent a pleasant two days' sight-seeing. Calling on Dr. C. N. Johnson we found him busy; but, as usual, ready to sacrifice to give pleasure to a brother dentist.

During our stay in Springfield we enjoyed the hospitality of Dr. G. H. Henderson and his charming wife. At the convention our reception was everything one could desire, and will always remain a bright spot in our memories. Every member of the Society with whom we came in contact seemed to make it his business to see that we enjoyed our visit.

The different committees seemed to have left nothing undone to contribute to the success of the meeting. The first feature I noticed as worthy of copying was that the first evening was not devoted to the programme, but was left open in order that the members should meet in an informal way at the Leland House, and renew friendships or make new acquaintances. Dr. C. N. Johnson took charge of us during that evening and introduced us to his friends in terms that actually, at times, made us blush. The indefatigable secretary, Dr. Peck, pinned neat little badges on our lapels proclaiming that we were each "a visitor," and from that moment we were "right in it." To say that we spent the evening in the company of such men as Drs. Black, Gilmer, Newkirk, Johnson, Noyes and Henderson, is sufficient guarantee that the evening was well spent.

Of the programme what can I say? It was all good—so good that to single out any portion as specially excellent would be difficult. Permit me to say, however, that the paper read by Dr. Peck, "Essential Oils—Some Recent Experiments," impressed me more than any other number on the programme. I would urge any one who can obtain the August number of the *Dental Review* to read Dr. Peck's paper. The personal sacrifice it represents in the way of original research was to me a revelation.

When half way through the progamme, and weary from the tension of listening to and discussing scientific questions in a scientific way, a refreshing break was made in the way of a paper on "The Beauties of a Country Practice," by Dr. Cormany. A good laugh served to rest the tired "grey matter," and the programme proceeded with renewed zest.

The great feature of the meeting was, of course, the clinic. Very complete arrangements had been made by the committee in charge, and every clinician, with one or two exceptions, was in his place ready to contribute to the profit of the meeting.

How I wished I could have transported about fifty Ontario dentists to the clinic that morning. I spent about an hour in the hospital across the street from the Leland House, watching Dr. T. W. Brophy remove the inferior dental nerve from a patient seventy-five years of age. The nerve was moved entire from mental foramen to the gasserian ganglion—a most interesting and difficult operation, indeed, taking into account all the conditions, the age of the patient and the fact that his heart was very weak.

In the clinic room proper of the convention, as in the State House, "comparisons are odious"—suffice it to say that about forty clinics were given, all of more than passing interest. They are big-hearted, those western men—big-hearted enough to welcome as a brother anyone from anywhere in creation, if only he is trying to advance the interests of the profession.

I saw men that actually loved one another. I heard men talk of "Uncle George Cushing" while tears stood in their eyes. Chicago seems to be big enough somehow to crush out personal jealousy, and all such littleness. I have attended State meetings, not in Illinois, and have heard men talk as if dentistry, like learning, "originated in the east and spread toward the west," but had not yet crossed the Alleghany mountains. I am beginning to think they are mistaken. While they have such men in the west as Black, Brophy, Newkirk, Johnson, Case, Angle, Peck, Yorke, Harper, Haskell, Noyes, Crouse, Schwartz, Gilmer, Harlan, the present is stable and the future is secure.

I forgot to say that we were duly introduced to the Society, but the time seemed to us so valuable and the feast of good things so abundant, that we simply made our little bow and sat down.

I would like also to mention the enjoyment of an hour with Dr. Haskell in his laboratory on our return to Chicago. It is indeed a treat to any dentist to have Dr. Haskell explain his cabinets of models, and hear the history of some of the cases. To Dr. C. N. Johnson, perhaps, more than to any other, we are indebted for the pleasantest outing of its kind in our lives.

G. S. MARTIN.

Correspondence.

To the Editor of DOMINION DENTAL JOURNAL:

DEAR DR.,—In reply to your queries I have no objections to answer them as frankly as they are asked.

1. Comparing our Canadian dental journal with those not published in the Dominion, I think we have no particular cause for fault-finding. I recognize the caution needed to keep out of embarrassing personal controversies, and the utter impossibility of conducting a journal to please the ethical and unethical, the satisfied and the dissatisfied, the man of exclusively scientific tastes, and the man who is exclusively practical. I can understand that some want their meat "on the joint" so to speak, and some only want "hash." The monthly *menu* supplied us all round has been worth much more money than we pay for it. . . . .

[The writer here launches into compliments, which we omit. We do not want compliments : they do not help us.—Ed. D. D. J.]

2. One special fault I find is that while the journal is printed and published in Ontario, and in the city where we have our College, we are left in the dark as to the doings of the school and the doings of the directors, until we get the printed annual report once a year. Someone should, through the

journal, furnish Ontario's societies with a monthly letter, descriptive of the work going on, the number of students, and other such information, and my opinion is, that if we were taken more frequently into the confidence in this way of the powers that be, there would be more harmony, and such failures, numerically, as was shown in the attendance in Toronto at our last Provincial meeting, would not occur. This I regard as a very serious omission which should be quite easy to rectify. Various meetings of the directors are held in Toronto during the year, and we know nothing about their proceedings until the annual report appears. I am sure there is no intentional neglect, but it would be easy to have no cause for complaint.

3. While I do not object to them myself, I know that many think the length of the original communications might be much curtailed. I do not want "hash" altogether, but hash is better than prosy articles, where the same thing is repeated, and there is too much amplification.

4. A wise restriction has been placed upon the class of patients who can afford to pay proper fees elsewhere than in the Infirmary, and I think a great improvement has been brought about by the Superintendent.

5. A large amount of money goes out of our funds, and I think more frequent reports should be made than once a year as to how it is spent.

Yours truly,

[The above is one of several letters we have received.—Ed.]

Reviews.

Oral Pathology and Practice.—A Text-Book for the Use of Students in Dental Colleges and a Handbook for Dental Practitioners. By W. C. BARRETT, M.D., D.D.S., M.D.S., Professor of Oral Pathology in the University of Buffalo Medical Department, etc., etc. Philadelphia: The S. S. White Dental Mfg. Co., 1898. Pp. 239. $2.50. Can be ordered from any of the depots advertizing in the DOMINION DENTAL JOURNAL.

This is a book that will give its readers something to think about. It will excite assent and dissent; and whichever way it may be judged, no one can rise from its study without a feeling of profit. It is one of the fortunate contributions to our literature which was born to fill a void, and bears no ear-mark of piracy and padding. It is exclusively devoted to one subject, keeps to the point; is written in plain, concise language, attractively arranged typographically, so that important statements are almost pictorially manifest and catch the eye quickly. It has the charm of condensation—a much more difficult trick of the pen than amplification. It is not a succession of quotations, but a comprehensive statement, clear, logical, and succinct. Some writers when they differ in opinion from others, "beg" to differ, but the author has that constitutional habit of "daring" to differ that has the ring of defiance, and perhaps suggests to more timid thinkers that he loves the war-path, and carries a chip on his shoulder. He is a hard hitter in controversy, but is built to take hard hits back wisely, so that whoever enjoys a mental wrestle with him, gets good of it, even if he gets beaten.

Dr W. C. Barrett, Buffalo, N.Y.

For many years, Dr. Barrett has been conspicuous in the higher arenas of education, journalism and association work. As a teacher he has aimed high with an individuality all his own, and those who have looked forward for the appearance of this book will not be disappointed. His friends especially will think none the less of it because of its thorough Barrettonian style, clear, fearless, and original in expression. The chapters on the diseases and the so-called diseases of dentition, supply much food for thought and some for controversy. It was once quite common in the mortuary statistics of Canadian cities to find dentition as a cause of death. The author compiles facts to prove,that "the diseases of which children mostly die are not those which could be materially influenced by the cutting of teeth." Logically this is correct: but could it not be as logically assumed, that were infants altogether free of the local disturbances produced by dentition, or, in other words, were there no first dentition, many of the causes of mortality would not have occurred, or if they had occurred, would at least have been mitigated in their severity. It would be absurd to affirm that a physiological cause would necessarily be productive of a pathological effect or to say that teething *per se* is a cause of dysentery. Yet may it not be reasonably held, that the diarrhœas, dysenteries, and fevers of infancy, whether they are or are not primarily due to improper feeding, may be so seriously aggravated by the coincident irritation of dentition that we may attribute to dentition the remote cause of death? Truth lies midway in this subject: the teeth are not indifferent, factors in many pathological results. There is no pathological parallel between the teeth and the nails; there is no physical impediment or coincident pathological history to the latter. Undoubtedly, as the author establishes, improper feeding during the period of most active development, is most generally the etiological factor in the so-called diseases of dentition but the "real diseases of dentition" are quite enough to produce complications, not only of a reflex-nervous character, but conditions dangerous to life.

The chapters on Caries are up to date; the importance of the medicinal treatment of the teeth is emphasized. Caries is chiefly due to the action of micro-organisms: antiseptic treatment is quite as important as operative. In discussing pathological conditions, the author happily blends histological and physiological tit-bits sufficient to interest and inform the student. Referring to pericementitis he shows that the text-books err in representing the arteries and veins of the tooth-pulp as passing out of a single foraminal opening, and traversing the tissues until they anastomose with some larger vessel of which they are branches, and which is not in relation with the tooth-pulp at all, and insists that no blood vessel or nerve can be directly traced beyond the investing pericemental membrane. It is important for the student to clear his mind of the cobwebs of our imperfect literature in these respects. The author greatly simplifies the study of pericementitis and alveolar abscess. In regard to his views of pyorrhœa alveolaris, no doubt on account of the existing obscurity as to its etiology, there will be considerable differences of opinion. He objects to the use of chemical agents to dissolve deposits, and favors trichloracetic acid to soften them; but he does not say anything which would deter many of us from the use of sulphuric acid. The objection that it may cause a slight dissolution of the surrounding bone seems to us an advantage within proper limitations. We have had made several instruments better adapted in their curved shapes to hug the roots, and in using sulphuric acid it is an advantage clearly that the instruments should be made of platinum-iridium, so as to be used in the pockets during the presence of the acid. No mention is made of the use of sulphate of copper, which causes contraction of the gums, and renders scaling easier. The action of the copper involves less loss of tissue, while its curative power is equal to anything else in use. It does not blacken the teeth like nitrate of silver, or act on the structure like acids if that is undesirable, nor does it spread over more surface than is intended, like chloride of zinc, caustic potash, etc. It causes little pain. Other caustics check granulations. Packed in the pockets for ten minutes at a time, three or four times at intervals of three days, and followed each time by bicarbonate soda, it has proved in our hands for many years successful. The author is very positive in his opinions in opposition to the old theory of the divergence of the nutrient currents from the teeth to the growing child. It is one of the humiliations or inspirations of honest investigation that we have to abandon pet beliefs which once we thought infallible. The author was one of the first to annihilate the old time theory, but we are not satisfied with his explanation of the causes of the caries in pregnancy. The explanation he offers will not, we venture to believe, always explain. That there is an invariable hypersecretion of saliva, and a constant acid reaction during pregnancy, we believe we have for many years convinced ourselves. This is not inexplicable, when we consider the physiological properties of the sympathetic ganglion, and the primary activity present in the uterine mucous membrane. The sympathetic system of nerves controls salivary secretion, and certain nerve centres are distinctly concerned in all increased secretion We regard hypersecretion as distinctively a sign of pregnancy as the discharge of non-coagulable blood is of menstruation, also that the reaction is invariably acid.

Our space will fail us to do full justice to this valuable work. It is one of the most practically useful in our literature, and cannot but be generally accepted as a text-book by the schools, and of deep interest and profit to the busiest practitioner who wants to keep pace with the times. There is not a dull line in it. We have met with few works so productive of thought. The desire to avoid cumbering it with a parrot-like repetition has perhaps been carried to an extreme, but it is so original and so practically valuable, that we may expect it to be one of the widest read books in our literature. Whatever is absolutely necessary for the exclusively practical dentist to know, seems to have been well covered, but there is a great deal of the result of the author's own scientific researches presented which illuminates the practical. In this respect, the author is a shining example of the value of theory and science united to the practical. The chapters devoted to diseases outside the range of the "purely practical" dentist, are written from a point of view superior to that regarded by the general surgeon. It is not unlikely that tumors and neoplasms are frequently unrecognized by the average practitioner; that he is blind to the symptomatology of oral conditions which the author maintains come within the legitimate sphere of the oral pathologist. The effort to stimulate study in this direction is as worthy as it is ambitious, and if the high ideal of the author can be attained, it will do much to elevate the status of the educated practitioner, to broaden the scope of practice, and to break the influence of the modern quack.

We feel that we do every student and practitioner in Canada a dutiful service in urging them to own this book. It is a book which the owner would grudge to lend to his best friend. The former would miss it in its absence: the latter would want to keep it too long.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

ASSOCIATE EDITORS:
G. S. Martin, D.D.S., L.D.S., TORONTO JUNCTION, ONT.
R. E. Sparks, M.D., D.D.S., L.D.S., KINGSTON, ONT.
Carl E. Klotz, L.D.S., ST. CATHARINES, ONT.
A. H. Beers, M.D., C.M. (McGill), D.D.S., L.D.S., COOKSHIRE, QUE.

EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

Vol. X. SEPTEMBER, 1898. No. 9.

WHY SHOULD NOT THE "DOMINION DENTAL JOURNAL" GO FREE TO ONTARIO LICENTIATES?

Some years ago, Dr. J. B. Willmott made the informal suggestion, that the DOMINION DENTAL JOURNAL, as the only one in Canada, should be supplied free to all licentiates of Ontario who are not in arrears in respect of any fees payable under the provisions of the Act of Incorporation. The suggestion was made in the mutual interest of the R.C.D.S., as the representative body of Ontario, and the JOURNAL as the representative of its literature.

It seems to be a fact, that a number in Ontario never pay the annual fee, which is not only recovered with costs by suit in the name of the college, but patients cannot be forced by law to pay any fee to a practitioner who is in default in respect of said fee. In a measure it seems to be the general opinion in Ontario that the annual fee should be abolished. The licentiates, as a rule, feel that they have contributed their quota for the benefit of the R.C.D.S., and have little or no personal interest in promoting the growth, or as it now is, the overgrowth of the profession. "Towards the general expenses of the college," meant a good deal before the treasury was so flush, and the number of students so extensive. For the session of 1897-98 there were received for students: lecture fees, $19,650; for anatomy fees, $380. In all, the receipts of the school amounted to $27,421.40; the disbursements, $16,791.16, leaving a surplus for the school paid to the treasurer of the board of

$10,630.24. For the year ending April 22nd, 1898, the total receipts were $13,882.87; disbursements, $3,638.65. Cash in bank to balance, $10,244.22.

Now it appears that out of the large number of licentiates in Ontario, only one hundred and eighty-two ($182) last year paid the annual fees! This certainly does not show a very lively interest on the part of the profession in Ontario, *en masse*, in the work of the board and the college. We are confronted with the grievance that the very large proportion of members having their own license have no particular interest in boosting the over-production of the profession; but they overlook the fact, that by abstaining from paying their fees and attending the meetings, they foreclose their privilege of making things different. We cannot ignore the fact, that among the non-paying licentiates there are a large number of worthy men. Something should be done to draw the mass of the members together. Those who take what we believe to be an unfair view of the work going on by authorities would have the best opportunity of inquiry by attending the meetings in person.

The business of this JOURNAL is chiefly to promote the interests of the profession at large. We have, time upon time, been asked to publish personal slander, and write public accusations against officials whom we knew were personally *sans peur et sans reproche.* But there is no reason why existing methods should not be modified if they are not what the majority of the voters want. With respect to the suggestion referred to in the beginning of this article, it was very generally favored, and while it may seem impossible to believe that we are in any way indifferent in the matter, so far as the benefit directly to the JOURNAL is concerned, we believe it would remove the grievance that members paying the annual dues get nothing in return. It would not be at all a novelty, as the members of the British Dental Association receive the journal of that society free, and there are many other illustrations of the same kind in England and the United States. If the licentiates of Ontario instructed the authorities to follow the example, it would have to be done. The small sum needed would not be missed from the large surplus. It is proposed to bring the matter before the next meeting of the Association. After so many years of independent effort, we do not think it out of place to ask this co-operative movement on the part of the profession in Ontario, whose funds have been so well and honestly managed, and who enjoy a prestige in consequence of which they have reason to be proud.

EDITORIAL NOTES.

HAS the time arrived when the plan of articling students by preceptors should be abolished? The mass of the profession in Ontario have congratulated themselves for many years that our system is in advance of the system of college training as generally in vogue in the U. S. A. On sober thought, however, is our system to be preferred? As things have existed for years in our Province the dentist who did a large extracting and plate-making practice articled as many as five or six students, and after training them in his way of viewing the question, namely, from a purely commercial and often dishonest standpoint, they were turned loose on an unsuspecting public, and the—"Lord help the public." Of course, the Board has to a large extent remedied that evil by their enactment a year or two ago, that no practitioner shall have articled more than two students at one and the same time. These plate-making fiends can not turn out as many per office as formerly. A glance at the situation in any of our large cities, Toronto for example, will convince one that a serious evil exists still. Scores of our best practitioners are refusing entirely to article students at all, claiming that it is more satisfactory to hire and train an assistant, usually a lady, who, in addition to assisting at the chair, can do all the plate work required in an office where the preservation of the natural teeth is made the chief aim rather than prosthetic dentistry. In this way the great majority of the students presenting at college under our present conditions are men whose training from a moral and ethical standpoint has been, we fear, in a wrong direction. No one will deny that a student's ideas on the question of ethics are generally the views inculcated by his preceptor.

It seems to the writer that with the number of poor people in Toronto, and in our public charitable institutions, that an infirmary or dental hospital, open all the year round, with a staff of competent supervisors carefully selected as to their attainments in operating, as well as in their strictly uncompromising attitude in the matter of ethics would be more likely to guide those entering our profession in such a way that we will not be called in after years to blush for their effrontery.

It may be argued that in the U. S. A., with the system here advocated, shysters of the worst kind have been graduated, but the circumstances are so different owing to our immense advantage in the standards of matriculation, that no such argument can be successfully sustained. Taking into account also the great numbers graduated from the United States colleges, they have perhaps a very much smaller percentage of shysters than are turned out in Ontario by our office method of training.

G. S. M.

DR. L. P. HASKELL, so long and favorably known as a post-graduate teacher, has been invited to Germany, where he will give instruction at some of the leading clinics during the next two months.

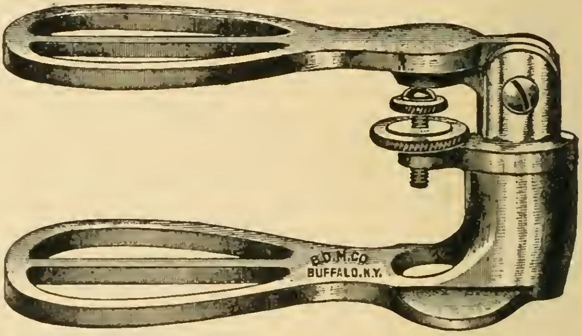
BROTHER Jonathan has cleverly extracted the eye teeth of the Spanish Don. It was a case of political orthodontia, which will enable the delayed *dens sapientiæ* to erupt. Spain now curses the memory of poor Columbus who got her into a peck of trouble by discovering this continent.

THE next meeting of the Vermont State Board of Dental Examiners will be held at the Pavilion Hotel, Montpelier, Oct. 18th, 1898, at 2.30 o'clock in the afternoon.

GEO. F. CHENEY, Secy.

St. Johnsbury.

The demand for a more perfect Crown Articulator has been met by the production of one containing new and practical features which will be appreciated by practical men.



The top of the Articulator is hinged in such a manner that it can be turned back parallel with the base, which overcomes the disagreeable feature of falling by accident onto the base and breaking the casts, and also enables one to fit a Crown in position without the obstruction of either half of the Articulator. It has also a side or lateral motion, by which a test of the proper occlusion of the cusps of the Crown can be obtained. This lateral motion can be continued to a quarter or a complete revolution if desired, thereby affording another means of free access to the cast. By the action of a spring and lock, the top plate is restored to its original position in line with the base and held firmly. This feature is presented in no other articulator, and is admitted to be a valuable one.

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ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO—BOARD OF DIRECTORS

Dominion
Dental Journal

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Original Communications.

FILLING: ITS SUCCESS AND FAILURE.*

By JOHN E. WILKINSON, Toronto, Ont.

Our subject stands for about three-quarters of the field of dentistry as practised to-day. All other operations and services take up very little more than a fourth of the average dentist's time. Our consideration of "filling" must, on the whole, be quite general, and, at best, very incomplete.

There are some quiet, retiring dentists, having small practices, but who are capable and thorough operators, whose percentage of successful fillings may be greater than that of men prominent as dentists. The kind of work one does is a good recommendation, but circumstances, influence and business tact often do quite as much as one's work in procuring and sustaining patronage. Very successful men at times have severe failures, while highly successful and skilful work may come from the hands of a man considered an unsuccessful dentist.

Ideal fillings are very seldom inserted. No one substance or preparation has all the requisites necessary for an ideal material, which should have the following properties:

(*a*) Plasticity for insertion.
(*b*) Unchangeableness of form or bulk.
(*c*) Sufficient hardness and edge-strength.
(*d*) A poor conductor of thermal changes.
(*e*) Insolubility in the fluids of the mouth.
(*f*) Resemblance in shade of the natural teeth.

A material with this combination of qualities remains yet to be discovered.

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* Read before Toronto Dental Society.

Successful fillings are those which replace tissue destroyed by decay, abrasion or fracture, endure, prevent future decay for the greatest possible length of time, rendering the teeth useful and comfortable, and producing the best possible appearance. Root canal fillings, temporary stoppings and filling of temporary teeth, will not now be referred to unless incidentally. As our definition is worded, a cement filling remaining useful for only eight months in one character of tooth, may be as successful as one of gold lasting thirty years in another kind of tooth. A few years ago I saw a large amalgam filling in a mesial cavity of an upper central, the work of Dr. Nathan Tupper, of Amherst, N.S., which had done service for thirty years, and from all appearances seemed quite capable of serving thirty years more. This was a successful filling. Had it been of gold it would have been more successful on account of the better appearance. Gutta percha, cement or amalgam fillings in cavities by no means thoroughly prepared, may be more successful work than perfect gold fillings inserted in cavities faultless in preparation. Such cases of course are exceptions, yet they exist, as for example in the case of a frail girl of a hysterical temperament. The former variety of work may be tolerated. The latter often discourages such patients, sometimes seriously injures them, and afterward the teeth are neglected. Without considering the peculiar and puzzling cases we have very great variety in the ordinary kinds of cavities and teeth of ordinary patients.

In practice the selection of the filling material is generally decided upon before the preparation. Gold is, as yet, the best and most reliable substance we have. It should be used for most cavities in the incisors, canines and bicuspids, mesial cavities of first molars, and occlusal cavities of first and second molars if the walls are strong. Exceptions to this will appear when speaking of other materials. Amalgam should be employed in buccals and lingual cavities of molars, unless small, the approximal cavities of the second and third molars, in any cavities in molars or bicuspids (excepting the mesial of the first) where the walls are frail or the teeth soft and chalky in character. It may be employed in the small palatal surfaces of incisors. Cement should be used in the anterior teeth of patients under fourteen years of age, or for older patients where the dentine is soft or the enamel thin and frail. It may be used in large cavities in the molars and bicuspids of the same character. Gutta percha might often be well selected for large cavities on the labial surfaces of incisors where acid or alkaline fluids cause rapid destruction of tooth tissue or of cement. It may be used in buccal cavities of molars, but will not be recommended. Tin will do excellent service in the posterior teeth. Porcelain inlays may do well (for appearance they are excellent) in smaller labial cavities of the anterior teeth. Combination fillings have also a place. We have been thinking of the teeth regardless of the person, who must always be considered. The temperament, endurance and caprice will be taken into account, also the ability or willingness to pay the reasonable fees to do justice to both operator and patient.

Upon efficient preparation depends an important half of the success of filling. Let us begin with gold. As a rule the approximal cavities of the anterior teeth when prepared will be oval in form, extending from the gum margin to almost as near the points of the teeth as the surfaces are in contact. Even when the original area of decay is small and circular it is well to cut away above and below to avoid ready recurrence. About the only exceptions to this rule are : (1) where the teeth are very strong and dense, and (2) where there is a free space between them. Toward the cervical margin especial care is necessary in cutting away so far as there is any superficial defect in the enamel, and when the groove for undercut is obtained, equal care is required to have fairly strong, well-supported margins, leaving no scale-like edges to be fractured on inserting the gold. Turning our attention to the palatal walls or margins which are often quite in contact, also thin and frail, a greater proportion of successes will be had if these are cut away till strong edges are obtained. The complete margin is best to be levelled outward, the emery or cuttle-fish disks or strips being used after the burrs or chisel. For undercut, the groove of the cervical margin should not be circular or even oval, but is better to be in a straight line so as to prevent rocking. Pits may or may not be used, but perhaps better results are obtained in their use. The retention toward the incisal edge is often the difficult and critical part, especially in thin, slender-edged incisors. Where the corner of the tooth is gone the case is more difficult. Deeper grooves are needed in the seat of the cavity. Some help may be obtained by a groove, not undercut, to form a rest on the palatal or labial wall, then getting the best possible undercut at the point. If the nerve has been removed, retention may be gotten by cementing a pin or post into the canal. Even if the nerve is still alive, a pin may be used by being threaded, then screwed intot he seat, a way having first been drilled with a burr of proper size. With labial cavities, extending well under the gum margin, it is the writer's experience that the moisture can be better excluded and at the same time more thorough preparation obtained by doing without a clamp. Sometimes the gum and dam may be kept retracted by holding the long ends of the ligatures. At other times, especially if the festoons be deep and narrow, an excavator held with care and sureness will do the work. Such cavities are drilled well out to either side. When finished the lower and lateral margins should be slightly levelled outward and smooth. Cuttle-fish disks or small Scotch stone points will do this. Let us refer to one other class of cavities to be prepared for gold—compound approximal in molars or bicuspids. In these free cutting is especially indicated, in free opening, lateral preparation and at the seat. The walls should be cut away wherever they come in contact, and the cervical margins generally, but not always, carried up to or even under the gum. The undercut is obtained in the sides. The seat is usually better without a groove and should be so formed as to allow a good base for the filling. In preparing the seat, inverted cone burrs are best, and in finishing the margins of the walls the cuttle-fish disks are almost essential where they can at all be used.

Preparation for cement should be thorough, but less work will suffice. The main principles are the removal of all decay, especially at the margins, sufficient undercut, and clean edges.

For amalgam careful preparation is quite necessary. Rather more undercut is needed than for gold, certainly more than for cement. Thin walls coming to the margins are to be avoided so far as is possible. Overhanging walls are to be cut away. In occlusal molar cavities all lines of decay between the cusps extending from the cavities, are to be freely cut out, also any similar defective lines extending over to the buccal or lingual walls. In buccal marginal cavities free cutting laterally will add to the successful service of the filling.

The methods of inserting the filling materials will be thought of in regard to a few points only. Gold first. In anterior approximal cavities, the most common point liable to defect is at the junction of the cervical and lingual margins. The therapeutic action of tin salts is well known. When about to insert our filling, we take a small roll of tinfoil, place one end in the undercut just at this point, allowing the other end to run out over the margin, then fill over with gold, we have at this very weak point a thin and small amount of tin which will oxidize and prove of valuable service. Dr. Hibbert Woodbury, of Halifax, follows this practice and has found it very satisfactory. The only disadvantage is that when finished, a black marginal stain appears, which, on examination by a dentist unacquainted with the method, presents the appearance of a slight leak in the filling. For approximal cavities where the teeth are in contact, separation is often desirable or necessary. Perhaps the most common and best method is that of gradually separating by means of pellets of absorbent cotton pressed well in. For these cavities in bicuspids it is perhaps better to always have some separation to allow the teeth to come into contact after polishing. In labial or buccal cavities an assistant is particularly helpful all the way through, in changing burrs and plugger-points, using the chip-blow and in carrying pellets of gold to the cavities, allowing the operator free use of both hands and hastening the operation, most important here, and at the same time watching the towels that they collect all saliva if any escapes from under the dam upon the chin and neck of the patient.

With cement, adjoining approximal cavities may be filled as a rule more satisfactorily by doing one at a time.

In filling with amalgam we shall refer just to the application of matrices. They are used for gold and cement, but chiefly for amalgam. With gold it is very difficult to obtain a thorough and perfectly flush-filling with a matrix. For amalgam the case is different. Here the use of a matrix may be very helpful or remarkably harmful, and just as much so its disuse. There are two points almost but not quite opposing: (1) the fillings when completed must be flush with but not overlapping the cervical margins; (2) the fillings, while thoroughly separate, should be in contact. Good judgment is necessary in the application of matrices.

Polishing is almost an essential, certainly an advantage, with every kind of filling. In finishing gold, Dr. Willmott used to teach us in college to successively burnish and face. The usual practice is to burnish as soon as sufficient gold is in, then work away with disks and strips till the desired contour and clean margins are obtained, but rather better results are to be had by using the burnisher at least once again just before finishing with the disks or strips. Amalgam fillings when hard if polished with disks and burnishers are certainly improved. If left as when inserted, the slightly rough surfaces and margins form lodgments for particles of food and fluids.

Examination of the teeth is one of the most important services a dentist is called upon to perform, and a book of examination blanks or charts is one of the most useful articles for the operating room. Some of our confreres who are excellent operators seem not to be sufficiently particular in examining the teeth and tissues of the mouth. These following cases, by no means isolated, will illustrate:

CASE 1.—Miss M.; teeth supposed to be put in thorough repair in February. Quality of teeth average. Came in June to have a broken filling repaired. On examination nineteen cavities were discovered.

CASE 2.—Mr. J.; teeth examined and defects attended to in February. Quality average. In July number of distinct cavities was twenty-eight.

CASE 3.—Miss W.; patient under twenty. Teeth attended to within a year. A number of cavities. also three lower incisors without cavities, but dead, extensive alveolar abscess and fistula.

CASE 4.—Mrs. S.; teeth examined within a year. Three fistulous openings over central, lateral and canine. Genuine maxillary caries. Bone completely gone in front of and between roots and above to the area of a large bean.

Failure in filling is not so common as success as defined at the beginning. Fillings which have been lost by accident or use of drugs as medicines are not failures so far as the operator is concerned. There are failures which the honest operator has to acknowledge. By unsuccessful fillings we mean those where, the conditions remaining constant and no accidents happening, the fillings did not endure as expected, did not prevent recurrence of decay for a reasonable length of time, did not restore comfort, usefulness, agreeable appearance, or fillings which in any way caused more harm than benefit to the teeth or surrounding tissues. On this part of our general subject we shall mention or speak of methods and cases most interesting from personal experience or observation.

Porcelain inlay fillings, both the baked and ready made, are interesting alone from observation. Some beautiful specimens of this work are occasionally seen giving enduring satisfaction. Those prepared in shades and standard sizes with corresponding sizes of drills, are most satisfactory. The line of cement between porcelain and cavity margin is very minute. Yet even it exposes some cement. Let us say this : From observation there has been a greater proportion of failures in porcelain fillings for the amount of work done, than in any other variety. We may say more and state that we believe of the porcelain fillings inserted there have been more failures than successes.

Amalgam and cement combination fillings frequently fail from the fact that the cement is not all covered, but is exposed to some extent at the margins, usually the cervical.

Cement is useful and is indispensable, but it has been and is sadly abused. Many a dental pulp is lost and the complete tooth sacrificed through it. We cannot say its proportion of failures is so great as with porcelain, for much less is expected from it. From its ready manipulation, and lowness of fee, it is more extensively employed than is for the best. More harm comes from it than from any other one filling material. Its uncertain solubility in the fluids of the mouth and its particular tendency to dissolve at the gingival margins while the remainder of the filling may remain almost intact, render it a very unreliable agent.

Copper amalgam is almost a dead subject as a filling for cavities. Nearly all know it, some of us from sorry experience. Others have seen it as our work, sometimes preserving the tooth faithfully but inky-black, disintegrating, and making a cringing noise as the explorer passes over it, at other times a black mass partially disappeared, about which is a large area of soft decay.

Gutta percha after a short while becomes softened and rough or adherent on the surface, which collects solid particles and fluids, producing an unwholesome condition.

With gold it happens often that the pellets have not been as thoroughly condensed at the lingual margin as at the labial. From this cause as well as from that of leaving very thin walls and margins at the same position, decay recurs there readily. Again, there are attempts made to fill cavities with gold where portions are almost inaccessible. Gold fillings inserted in approximal cavities so that they reflect upon each other, giving the appearance of dark spaces, decay or amalgam filling, amount to a failure in appearance.

Filling any approximal cavity which has been prepared, leaving the occlusal wall very thin and frail, is a cause of frequent failure, this thin wall giving way from mastication.

Large metal fillings with no intermediate non-conducting material like cement, gutta percha or balsam varnish to prevent thermal shock, at the least produce much uncomfortableness and often result in death of the pulp with its attendant more serious consequences.

Filling over a dead putrescent pulp can hardly be named a simple failure, unless done by mistake, which is surprisingly possible. Wilfully done it amounts to gross malpractice.

One failure in filling is in not filling, as in the case of the permanent teeth of children where the quality is hopelessly poor. In such conditions the anterior teeth, and if possible a molar and bicuspid for each side of each jaw, might be preserved in some way until about the age of twenty-one.

There are reasons for these and other forms of failures which at least a number of us have had. Having discovered a cause we should do well for our patients and ourselves to set up danger-signals in noting the cases in some practical way. Some of our professional brethren have been and are particularly helpful to us all by publishing in journal and in book the location and kind of some of the rocks upon which we have or might ignorantly run, also the methods by which we may avoid, remove or destroy the obstacles. We both profit by and show our appreciation of their efforts by reading their charts, then choosing courses intelligently for ourselves. Self-reliance will help anyone, but added to this, the more we assimilate and incorporate into self from observation, study and practice, the more there will be to rely upon, failures will be fewer and success greater.

402 Sherbourne Street, Toronto, Ont.

"SENSITIVE DENTINE."*

By Dr. R. G. McLaughlin, Toronto, Ont.

In hypersensitive dentine is frequently found the most serious obstacle to the proper and thorough treatment of dental caries. This condition must be considered as an exaltation of the normal sensitiveness of the dentine, and may vary in degree from slight pain to the touch to so high a degree of sensitiveness as to be unendurable. This latter condition often presents so serious an impediment as to forbid all instrumentation till a reduction of the sensitiveness has been effected.

This altered condition of the dentine has been considered by some as an inflammation, but it can be more logically explained as "disturbance caused by sudden or gradual exposure of a tissue which is naturally protected from irritating influences by the enamel."

The normal sensitiveness of the dentine is not high, as is shown by an immediate examination of a surface exposed by accident; but after a few days the exposed surface becomes abnormally sensitive to mechanical contact or application of cold.

When the exposure of the dentine is brought about by the slower process of caries the sensitiveness is liable to be more exalted and is only prevented from giving constant indications of this condition by the presence of carious matter which is a poor conductor of heat and cold. This accounts for the fact that while there sometimes may be acute pain in the early stages of decay, the irritability appears to become less as the disease progresses.

When the dentine becomes exposed by abrasion it is generally not so irritable as when exposed by the process of caries. This is accounted for by the fact that for some reason a change takes place within the tubules by which their capacity to convey sensation is diminished, and in some cases entirely obliterated.

In the case of receding gum with the cementum exposed, a very high degree of sensitiveness is generally encountered. This particular exaltation can be explained by the acid condition of the mucous secretion which is here pounded out on the teeth, combined with the fact that these parts are not so easily cleansed.

It is noticeable, also, that different parts of the same cavity do not present the same degree of sensitiveness. It is almost invariably found that that part of the cavity forming the line of union between the dentine and enamel is the most sensitive, leaving out the theory that sensitivity is always the greatest at the terminal endings of the sensory nerves. This fact is well illustrated in cavities in the occluding surfaces of molars which are almost always more sensitive at their margins.

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* Read before Toronto Dental Society.

In the case of cavities partially filled with a soft leathery decay, the zone of highest sensitiveness is generally found immediately beneath the softened portion of decay. After this point is passed the pain generally becomes less acute and in some instances approaches the normal.

It also must be remembered that the condition of the fluids of the mouth exert a direct influence on the sensitiveness of the teeth. One authority states it as an axiom that "no cause is so active as a primary influence in inducing dentinal sensitivity as a constant slightly acid state of these fluids," and conversely that a neutral or slightly alkaline state is non-irritating.

Also in dealing with this subject we must continually bear in mind that constitutional disturbance, especially in the nerve system, contribute greatly to the high degree of sensitiveness to be found in the dentinal structure.

The element of the dentine specially concerned with its sensitiveness is that contained within the tubuli. The exact nature of this matter has not yet been clearly determined, but our experience and observation has shown us that it is capable of extension and contraction, and in looking over all the facts in connection with hypersensitive dentine it is not difficult to conclude that this exaltation is directly connected with an irritated or diseased condition of the contents of these tubuli. The older theory was, that the sensation was carried from the point of contact through this medium to the nerve centre by wavelike motions or vibrations. But when we consider such facts as, that different parts of the same cavity vary in degree of sensitiveness—that in the case of deep leathery decay (as before stated) it is more sensitive immediately beneath than it is a short distance beyond—that in some instances local sedatives modify the degree of pain—and that coagulents generally decrease materially the capacity of these contents to convey impressions, then we must conclude that such a theory is not well grounded, and that these tubular contents are more vitally connected with the nerve centre than was at first supposed.

Having considered the general conditions governing the hypersensitiveness, we will look for a few moments at the general methods of treatment.

The matter of instrumentation is of first importance. In this our motto should be "Avoid pressure." Our burrs should be keen and smooth so that they will cut smoothly and noiselessly. Our excavators should not be thick and dull as many are when received from the factories, but should be so sharp and thin that the razor-like edge will slide under the decay and peel it off in layers.

With proper instruments, lightness of touch and sympathy for our patient much can be accomplished towards alleviating the suffering.

As to special methods of treatment I merely mention, first, cataphoresis. This method, though of recent origin, is already widely known and more or less appreciated. Many in this meeting have had considerable experience with its results, which I trust will add interest and material to the discussion of this paper.

In the case of teeth of poorer structure being badly decayed and often the cavity partially filled with disorganized dentine, I generally find it of great value in alleviating the hypersensitiveness to seal up in the cavity for some days the ordinary oil of cloves. This not only acts as a slight anæsthetic but more particularly has a therapeutic effect on the diseased tubular contents and thus reducing the exalted sensitive condition of this element.

Another topical remedy of considerable importance is zinc chloride. It posesses in a very high degree the two essential properties for neutralizing the sensitive-carrying power of these tubular contents—namely, a great affinity for water, and a coagulating effect on albumen. It is very penetrating in its action and hence should be used with extreme caution in deep-seated cavities, or in teeth of poorer structure. A fully saturated solution of the salt should be applied and left; the period of pain caused by its action has ceased, which indicates that it has passed the zone of exalted sensitiveness. Its action can be immediately neutralized by flooding the cavity with water.

A special remedy I have found to be of practical value in most cases is a combination of chloroform, ether and menthol applied with a hot-air syringe. This has seldom failed me even in the most extreme cases to make the operation at least bearable.

Dr. Clyde Payne recommends in strong terms a combination of carbonate of potassium, cocaine, carbolic acid and glycerine, as folows: Make a saturate solution of carbonate of potassium and glycerine, then a saturate solution of cocaine and carbolic acid and mix the two together on a warm glass slab. After drying the cavity thoroughly with alcohol and hot air apply a drop of the obtundent and continue the blast of hot air for five minutes. Dr. Payne states that with this remedy properly applied he is able to obtain better average results than with cataphoresis.

Other specific remedies might be added to this list, but enough have been mentioned to fill the scope of this paper.

Still, aside from these special remedies, there are always two essentials which tend to lessen the suffering in the dental chair—First, the patient should not at the time be suffering from any nerve disorders. If this is found to be the case the operation should, if possible, be postponed to another appointment. Second, the relations existing between the operator and patient should be of the most cordial nature. If the patient feels she has full confidence in the gentleness and ability of the operator, she will rest easier in the chair and submit more quietly to the operation. And thus in such a relaxed condition the pain of the operation is much lessened.

COMBINATION GOLD FILLING.

By E. R. RANDALL, D.D.S., Truro, N.S.

One has not to go very far in dental practice until he will meet with a case which I will endeavor to describe. A front tooth, probably a cuspid, with large shallow cavity on labial surface, extending far beneath margin of gum.

This is exceedingly difficult to fill with gold, as even by using clamps it is almost impossible to get rubber dam up far enough and keep it there. The most satisfactory method which I have found in such cases is to fit a 22k. gold band around neck of tooth 1-16 inch wide at back, ⅛ inch wide or less in front, as the case may require, cement this in position pushing it well up under margin of gum. After cement has hardened, preferably at a later sitting the rubber dam may be applied without any trouble, make undercut in cement underneath the band, and put in a gold filling finishing flush with gold band. When all is burnished and polished, you will need to look very closely to detect the joining of the two kinds of gold.

RECURRENT APTHOUS STOMATITIS.

By W. G. B.

My attention has been many times directed to a form of apthous stomatitis coincident with the catamenia in anæmic patients, which disappears after anæmia has been treated. It is not very difficult for the observing dentist, debarred from the privileges of plain inquiries of the family physician, to discover physical signs and symptoms of menstruation, and within the last seven months I have paid special attention to a number of recurrent cases of the apthous form which periodically appeared with the catamenia or disappeared upon their cessation, with little or no treatment. The signs were of a mild type of oral ulcers covering the gums and lips chiefly, accompanied invariably with hypersecretion of saliva, to which I drew attention in a paper read before the New York Odontological Society, as an almost invariable case of menstruation. Four cases during the last five months were so remarkably distinct, and in two the indurations were so apparent that I referred them to the family physicians for confirmation, and subsequently learned from them that this appearance had regularly returned for several years. These cases are, I venture to suggest, better treated by constitutional treatment than by local. I refer specially to those markedly associated with anæmic conditions. The local treatment which a dentist might feel justified in suggesting, must necessarily be of little or no avail, without the constitutional treatment which is within the province of the physician.

Proceedings of Dental Societies.

THE ONTARIO DENTAL SOCIETY.—LETTERS FROM OLD PRACTITIONERS ON THE 30TH ANNIVERSARY OF THE INCORPORATION OF THE DENTAL PROFESSION IN ONTARIO.

Dr. Nelles, London, Ont.

As you say, I was the first Canadian to obtain a degree in the dental profession, which I did in 1860.

I had the honor of sitting at the feet of the Gamaliel of the profession in the United States during the two sessions of the Baltimore College, viz., 1858-9 and 1859-60. The Faculty at that time consisted of Drs. Chapin, Harris, Piggott, Bond, Wright, Austin, Johnston, Church and Gorgas, nearly all of whom were medical men and distinguished authors. I spent a short time in Dr. Harris's office, but I never served any apprenticeship in any other office.

I was the first to introduce rubber work in this city. Although Dr. George Elliott was advertising it in Toronto, in 1860, at $60 per set. For a number of years we got $40 per set in this city. I also introduced gas, ether, spray, cocaine, and celluloid in this city. One of my students, Dr. H. R. Abbott, is one of the leading dentists of the east to-day.

Dr. Clement, Kingston.

In answer to the little letter you wrote me to give you something about myself, I beg to say that after finishing my term of pupilage with the late Dr. Waide, of Ogdensburg, I located in Kingston, on the 20th September, 1857 and have been here ever since.

At that time there were only about half a dozen dentists between Cobourg and Montreal, Relyea in Belleville, Day in Kingston, Legge in Brockville, Weagant in Morrisburg, and one in Picton. Now I believe there are nearly one hundred covering the same ground.

Fees were very low for operating at that time, and I regret to say that as the profession is becoming crowded they are returning to the same low figures. It is remarkable how dentistry has become developed since that period. In those days none but gold or silver plates were worn. In order to practice, one had to be well up in metal work, and the fees were very good.

I took an active part in securing our Act of Incorporation. Was a member of the Board of Examiners when the present College was established at a meeting held in Dr. Chittenden's office in Hamilton, and have served several terms on the Board since the College was started.

I have always endeavored to practise dentistry in a professional manner, and if dentists are only true to themselves there is no reason why the dental profession should not stand on an equal footing with other learned professions.

DR. J. O'DONNELL, PETERBORO.

I was always a great advocate of the Ontario Dental Society meetings, and as a rule attended, because it is a well-known fact that the flourishing condition and standing of the profession to-day must be attributed to a little dental association formed at the Queen's Hotel, Toronto, thirty-one years ago last January, and consisting of only nine members. In this case the old rhyme is verified again, "Large trees from little acorns grow." Let me tell you that the great city of Toronto did not contribute a single old and leading dentist to that assembly. Mr. M. E. Snider, a young but enthusiastic dentist, was the only one. This meeting appeared to be beneath the notice of the great men of that day in Toronto. It was the small cities and towns from whence they came. The city of Kingston sent Dr. B. W. Day, Hamilton sent C. S. Chittenden and D. A. Bogart, the town of Brockville; A. D. Lalonde, Picton; H. T. Wood, Cobourg; F. G. Callender and J. S. Scott, Peterboro; your humble servant, J. O'Donnell, and, as before stated, Toronto, M. E. Snider. The above named formed the first Dental Association in Canada, therefore I have great respect for and sympathy with the Ontario Dental Society to-day as well as in the past. I congratulate you, sir, upon having had the honor of presiding over the dentists of this Province. I too, sir, had that distinguished honor, and venture to hope that during your tenure of office there has been less rivalry and more harmony than during mine. In my day all wanted office, and if not got, kicked over. In one instance a rival society was formed. This was the means of dividing the profession into two hostile camps, thereby causing dissension, and destroying that harmony that should prevail, as originally intended.

Office should be of minor consideration; in fact, the office should seek the man instead of the reverse. I may here state that I think the meetings of the Society should be held at the time of the election of the Board; that the election of the Board should be as formerly instead of the present mode, an open general meeting by ballot. The districts could each meet and elect its representative.

DR. MARTIN, OTTAWA.

In 1860 when I commenced in my brother's office, mechanical ability was pre-eminent to success. Harris' "Principles and Practice" was my principal study. Having a limited, very common school education, I was not very familiar with chemistry, physiology, anatomy, etc. Besides being a French Canadian, I was very deficient in the English language (traces of which you will no doubt notice). But during my career I met many coming from College, and this contact gave me hope! Being a gunsmith and consequently poor, I was from necessity compelled to make most of my instruments; some of them I still use—pluggers, stump elevators, hand drills and lathes. I still use, almost daily, in preference to any I have seen, a steel finger ring with socket to facilitate rotating hand burs and drills. This I made of a piece of steel from my wife's corset and I oft repeat the same gag to my patients, that I let nothing go to waste although it had been to *waist* for some time! Some remind me, with a sigh, that I said that before! I need not give in detail the progress that has been made since 1860. The dental journals have from time to time given sketches of the manner of practice by dentists before incorporation, and, no doubt, my old friend Dr. Wood will describe to modern graduates how the old pioneers struggled for existence. Then each had some mode of manipulation different from the other. The organs of invention were exercised to discover something superior to anything his fellow-dentist possessed. When some useful discovery was made, it was often kept a secret, and used to demonstrate superiority. I recollect using for a short period a fusible metal for filling, composed of bismuth, cadmium and tin, and fusing it in the teeth; that was not a useful discovery, and was discarded. The only means for drilling and burring was by finger and thumb. The skin became hard and callous, frequently sore, and always very tiresome. My brothers and myself put our heads together in order to discover some motive power for relief and expedition. We had a number of pulleys, wheels and spindles constructed, and nearly perfected, when a Yankee comes along with a much simpler construction which we bought for sixty dollars! Then it dawned upon me that there were others from whom I could derive benefit. A more liberal feeling grew, that as I derived benefit from others, I also should contribute what knowledge I possessed for mutual benefit. The same spirit animated others, and the reputable dentists joined and became incorporated.

Gold and silver were principally used for base plates, single gum teeth had to be artistically ground and filled separately. I witnessed the introduction of gum sections, the vulcanite, the clumsy vulcanizer, and the rubber dam. Then we used *sometimes* a damn when a gold filling was spoiled by moisture. The old reliable but much abused amalgam will receive attention from Dr. Black, of whom I have heard much, as one who has contributed largely and beneficially to the profession. I would have liked to hear him, and witness his demonstrations. I hope details will be published and distributed among the physicians, so as, if possible, to disabuse some of their minds, and modify their condemnation of its use; some of them claim that mercury is absorbed in the system. By their recommendation many poor people, who could ill afford it, have had all amalgam fillings removed that were safely preserving the teeth. I occasionally see persons enjoying good health who have had for over thirty years six or more large amalgam fillings which have and are to-day still preserving teeth that would long ago have perished. I have filled teeth when removing the pulp was not thought of (at least by me). After filling, the tooth was drilled on the side, and the patient instructed to prick the opening and allow the gases and pus to escape, when soreness was felt! Alas! the end soon came; the constitution was bad, and would not tolerate the dead substance. It is strange that it did not occur to me that roots supporting pivot teeth very seldom gave trouble, and that other roots properly cleaned would be equally free. Still, when we could not save the teeth, we could insert artificial substitutes very lifelike and substantial; we have the continuous gum on platinum plates as well as single teeth on gold and silver. Our object then was to screen the work as being artificial; at present the reverse is apparent, judging from the gold displayed in many mouths; some look like door plates waiting for an inscription, and seems an imitation of a barbaric age. I have in possession a full set of teeth made over one hundred and thirty years ago, with gold spiral springs, for retention; the molars carved from walrus ivory, the mineral anterior teeth riveted on a gold plate, by a gold pin piercing the centre; the whole lower plate carved from ivory with mineral teeth beautifully carved and fitted into it. The work must have cost a great amount of time, skill and labor. It would put to blush the best modern bridge work.

DR. RELYEA, OSWEGO, N.Y.

You suggest that I give you some of my recollections of pioneering in Canada. Fresh from my preceptor's office, J. S. Wood, M.D., the Medical College at Albany, and favored with many good testimonials, a good outfit and fair stock, I launched my bark upon the sea of great expectations. After visiting several cities and towns of northern New York I made my debut in Canada at the old Limestone City, July 1st, 1842. Kingston, though the capital of all Canada, had a population of only 14,000 inhabitants and no local dentist.

The late Dr. D. S. Golary, of this city, made professional visits there when called. Not being favorably impressed with Kingston I went on a prospecting tour; went by boat to Belleville, then to Toronto by stage. I made the acquaintance of a Canadian M.D. who was on a lecturing tour, and who afterwards located at Buffalo as an oculist. He was anxious to make a canvass of the Canadas, and prevailed upon me to join him. We went to Chatham and from there visited every town and city in Ontario, then Upper Canada. Bear in mind there were no railroads in Canada in those days. At Montreal there were three dentists, but only two at Toronto. We found no local dentists in any of the large towns such as London, Woodstock, Brantford, Hamilton, Cobourg, Belleville, nor in any eastern towns. The entire country then depended upon trunk-in-hand itinerants, and the unskilful operations performed by most of them will long be held in remembrance by an outraged community. The country was infested with those quacks, and truly some were curiosities. One came to my rooms and prided himself on having filled seven cavities before breakfast, his patient an apprentice, his office the blacksmith's shop, and his operating chair a wooden horse. A great overgrown denizen introduced himself as Dr. So-and-so, and stated that he was the tooth-puller for all the country, and, to impress me with his importance, he illustrated by that peculiar wrench necessary in the use of the turnkey and said, "*It takes me to yank them out.*" One aspired to plate work; he got as far as the metal mould and then hammered the plate to it; he had no conception of the counter mould and I was mean enough not to help him out. The country people were poor and illiterate. One asked me what is dentistry? What do you do? Allow me to congratulate you and the members of your Society that you are living in this advanced age. Dentistry has within my short recollection worked its way up from comparative quackery to a scientific and honorable calling, and the advance in the art has principally been accomplished through colleges, journals and societies such as you are now holding. I hope you will urge the members of your Society to support the CANADA DENTAL JOURNAL. The noble editor has more than held his own, and much credit is due him for the courageous manner that he has ever wielded the scalpel in ridding the profession of those excrescences that are ever prying upon the community.

DR. B. W. DAY, LOS ANGELES, CAL.

Your communication of January 25th was a pleasant surprise, and should like so much to attend your celebration on the 4th of March next, but the distance is too great. Well, it hardly seems to be thirty years since I issued the circular to the dental profession asking if they would attend a meeting if notified when and where, with a view of forming an association, and also a bill of incorporation. I found in the profession a sufficient number of loyal and hard workers who responded in the affirmative. At that meeting the Association was formed. Then when the incorporation of the profession was brought before its members we found some, and may say a strong opposition, claiming the Association was all that the profession required, but the supporters of the bill carried the day, and am proud to know that both the Association and incorporation are in existence to-day and have done good work in raising the standard of the profession to a grade that it never would otherwise have attained. Now, while I had something to do in bringing this about, it would have been a useless undertaking had I not had associated with me those who showed energy and ability, and used it to place the profession where it belonged before the public; and am also pleased to know that two of the old veterans, Drs. Wood and Willmott, are still in the harness. You have my good wishes and absent support in your thirtieth birthday, and may the profession be as much advanced in the thirty years to come as it has in the thirty years past.

Translations

Edited by CARL E. KLOTZ, L.D.S., St. Catharines.

FROM GERMAN DENTAL JOURNALS.

ABOUT NEW METHODS OF TREATING DISEASED PULPS.—Dr H. Bönnecken, professor at the Imperial Institute in Prague. The usual method of treating diseased pulps (I refer to the cauterization with arsenic followed by the extirpation of the pulps and filling the root canals) has two drawbacks. Firstly, the time it requires, and secondly, the pain caused to the patient. To place myself in the proper light as regards this question, I may observe that I consider the ideal to be sought for is to remove every trace of nerve fibre from the canals, thoroughly sterilize them, and fill to the apex. Only from a tooth thus filled are we certain of permanent success. Unfortunately in a great many cases this ideal cannot be carried out. To enter and remove every trace of nerve fibre out of the canal of an anterior buccal root of a sup. molar, or from the narrow root of some bicuspids, is sometimes a very difficult matter ; in such cases we are forced to leave some of the nerve fibres in the canal, also in some which are easily accessible we cannot complete the operation of extirpation of the nerve on account of the pain caused, in spite of the use of arsenic, cocaine or chloræthyl. The opening out the pulp chamber with a sharp burr drill, and the removal of the pulp is generally painless, but the entrance into the canals is ofttimes very painful. How can we now fill a tooth successfully with the nerve fibres left in the canals?

Do we possess a remedy that wiil effectualy destroy the vitality of the nerve in a short time, and at the same time keep it in an aseptic state? Without enumerating the different remedies and by whom they were introduced, I will give you the result of my experiments with another remedy which appears to have solved the problem. This remedy is formaldehyde. My observations on the effect of formaldehyde on living pulp tissue induced me to try this new remedy as regards its value in teeth after the application of arsenic. I wanted to find out if it was possible to coagulate and harden the remaining nerve fibres, after arsenic cauterization in the mouth the same as microscopic specimens are prepared and hardened with it. I commenced my experiments with the commercial 40 per cent. solution. The teeth treated were molars and bicuspids with acute or chronic pulpitis, but not such having decomposed pulps. Two days after the application of arsenic, the rubber dam was adjusted and the pulp removed with a sharp round burr drill, the pulp chamber was then washed thoroughly with the 40 per cent. formaldehyde, and a pellet of cotton saturated with the same solution placed into the chamber, and covered with cement followed with a permanent filling at the same sitting. In this manner I treated about fifty cases, and all with the same results, viz., that immediately after the application of formaldehyde, pain would ensue and increase in intensity, lasting from half an hour to four hours; in one case it lasted about twelve hours. The duration of the pain was evidently influenced by the depth of the arsenic cauterization into the root canals, so that in almost total destruction the pain was of short duration, and in imperfect cauterization it lasted longer. After the pain had subsided, the tooth was insensible to thermal changes or tappings. After this experience the results of the formaldehyde treatment appear satisfactory, but, on the other hand, the pain caused in the beginning must be considered a great drawback. It seemed to me that the pain was caused by a too concentrated solution. I tried a 20 per cent. solution, then a 10 per cent. solution and finally a 5 per cent. solution, which latter I have adopted. I also tried to obviate the pain by an addition of cocaine.

Without going into detail of all my experimenting, the following formula is the one I arrived at and am now using:

$$\left.\begin{array}{l}\text{Cocaini}\\ \text{Thymoli}\end{array}\right\}\bar{a}\bar{a}\ 1.0$$
Misc exactissimi terendo, addi
Sol. formaldehyd aquos (40 per. cent.) gutt x
Zinc oxid 2.0
Fiat pasta.

The addition of thymol in the plaster effects a safe permanent sterilization of the fibre, as there might be a possibility of an evaporation of the formaldehyde, and viable germs might develop. Up to date I have treated about five hundred cases of pulpitis in this manner. In forty-eight hours after the application of arsenic, I removed the pulp and washed the pulp chamber with a 5 per cent. solution formaldehyde, and placed a pellet of cotton with the above paste directly on to the exposed nerves in the canals, and where possible, without causing pain I pumped some of the paste into the canal. The cotton and paste were covered with cement or gutta percha, and the tooth filled permanently. Every one of these cases was successful. I did not require to remove a single filling or extract in any of the teeth. The pain caused by using the concentrated solution of formaldehyde (40 per cent.) was not experienced in a single case where I used the formol paste. The reason I assign for this is the diluted state in which I use the formaldehyde and the addition of cocaine. Another great advantage of this treatment is that the teeth do not discolor. I think I am justified in recommending this method of after treatment of cauterized pulp on the results of my two years' experience. But I will repeat, that I consider the old time style of complete pulp extirpation and filling of the root canal to the apex as the only method with which no fault can be found, but for the numerous cases in which this cannot be done I strongly recommend the forgoing modification.

Although two years' experience is a short time to speak of a permanent success, yet it seems very probable that a sterilized nerve is just as good a permanent canal filling as chloride zinc or gutta percha. Non-success can only occur when the nerve fibres are not thoroughly sterilized. I must lay stress on the fact that the success depends solely upon the thoroughness with which the work is done; the removal of the pulp from the chamber, the washing out of the latter, and the antiseptic treatment of the nerve fibres in the canals with the formol paste. Avoid the unnecessary forcing of the broach into the canal containing live nerve tissue, thus causing pain to the patient. The principal advantage of this treatment is, it causes no pain or inconvenience. I therefore use it particularly with nervous female patients. It is a duty from a humane point of view to inflict as little pain as possible, and for such cases the formol paste has become indispensable with me.

I would not like to close this paper without saying a few words about a method I have been following for some time in the treatment of putrescent pulps, and with such success that it is now a pleasure for me to treat them. The new method is a modification of the sulph. acid treatment of root canals, recommended by Dr. Callahan. I consider the introduction of 50 per cent. sulph. acid into the pulp chamber, and the pumping of it into the canals with a fine nerve broach, thereby enlarging, and at the same time disinfecting them, a great advancement in the moue of treating root canals. But, if in the pursuance of this treatment, we do not use soda bicarb. for the neutralization of the sulph. acid, as Dr. Callahan directs, but use, as I have done for some time, peroxide of sodium ($Na_2 O_2$) by which according to the formula $H_2 SO_4 + Na_2 O_2 = Na_2 SO_4 + H_2 O_2$, a violent development ensues, which in its nacent state in the canals, brings about an astonishingly rapid sterilization, and we have a method which, after a great deal of experience, I wish to point out as an ideal one.

After the sulph. acid has been placed into the cavity, it will be found that canals into which the broach could not at first be entered, can now be introduced freely, and with several applications can be enlarged with pulp canal cleaners to the very apex. Thus the work of enlarging canals can be accomplished in a few minutes, whereas it would take a very much longer time with the nerve canal drill, if it can be accomplished at all. Nerve canal drills have done more harm than good, and with the Callahan method have received their death-sentence.

Peroxide of sodium, a strong caustic alkali, is a yellowish powder, and should be kept in a well-stoppered dark bottle. Its application is very simple: A Donaldson broach is moistened with water, and dipped into the powder, a few grains will adhere to the point of the broach, and this is worked into the canals containing the 50 per cent. sulph. acid; a bubbling up will immediately follow producing the well-known antiseptic $H_2 O_2$. If the canal has not been sufficiently enlarged by means of sulph. acid, this will accomplish it, as it saponifies the contents of the canals and the bubbling throws the debris into the cavity from which it is easily removed.

After the cavity and pulp chamber have been cleaned, and the canals treated with the 50 per cent. sulph. acid and peroxide of sodium, which is repeated until no more bubbling follows, the cavity pulp chamber and canals are flooded with whatever antiseptic one gives the preference. I would recommend oil of cinnamon on account of its penetrating powers.* The cavity and canals are now dried with cotton and air syringe, the canals filled with chlora percha, and the cavity filled permanently with whatever filling material one desires. Formerly I used to fill the cavity with a temporary filling. and after eight to fourteen days remove this and fill permanently, but I do not consider this necessary and now always finish at the same sitting. In cases where the entrance to the canal cannot be found, Dr. Callahan recommends the placing of a trace of the 50 per cent. sulph. acid into the cavity and sealing it with cement. After twenty-four hours remove the cement, and the walls of the cavity will be found to be white, while the entrance to the canals will be seen as small dark spots. Should one after this not be able to enter a canal with the finest broach, it may be taken for granted that the canal is obliterated, it can be disregarded, and the work proceeded with.—*Journal fur Zahnheilkunde.*

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* I prefer oil of eucalyptus. C. E. K.

Abstracts.

Edited by G. S. MARTIN, D.D.S., L.D.S., Toronto Junction.

DR. TOM CRENSHAW, always full of resources, suggests that a hot-air blast thrown upon the paraffin will melt and distribute it over a cement filling with uniformity and encourage its flow in close approximal surfaces.—*Dental Weekly.*

NERVE PASTE.—The following for a nerve paste, Dr. Chupein says, is sure and painless: Acetate of morphine, hydrochlorate cocaine, powdered arsenious acid, āā ʒ gs. ½ Mix and use carbolic acid to make paste. The paste must be made on a slab or tile by thoroughly mixing with a spatula.—*Dental Weekly.*

USE SCREWS.—Dr. H. W. Arthur, in *Cosmos,* says that screws should be more generally used for security in contour filling and as a foundation for crowning. In lining teeth the screws should be located at the point where the greatest amount of solid tooth tissue is available without encroaching upon the pulp.

MY method of filling root canals is with common lime mixed with water to a pasty condition, with enough carbolic acid and iodoform well mixed with it to give it as much antiseptic and disinfecting qualities as possible. I have used this method over three years and find it satisfactory.—W. D. SNYDER in *Ohio Dental.*

TO REMOVE CROWNS SET WITH VARNISH OR GUTTA PERCHA.—Take a small medicine dropper, put a white cotton string or wick in it, cut it off even with the tapering glass, and then draw in a few drops of alcohol and light it. You have a miniature alcohol lamp with a flame about the size of a pinhead. Heat the tip of the tooth and remove it.—R. E. PAYNE in *Items of Interest.*

PUT a mandrel in the handpiece, set the engine in motion and let the mandrel wind on a piece of cotton from the fingers which forms a cotton cone. Then with the aid of polishing powders we can cleanse the crowns and necks of teeth, and get into the pockets and loosened gum tissue smoothing the rough surfaces of the exposed roots and doing it in a merciful way. The size of the cone will suggest itself to the operator.—*Dental Digest,* New York Letter.

Dr. G. T. Carpenter believes that gum tissue may be reproduced where it has receded from the tooth, from pyorrhœa or other causes. His method is to produce irritation by means of a gold band around tooth, the lower edge of band being roughened so as to cause irritation and new granulations. The whole is protected by a vulcanite hood held in position by clasps between the teeth.—*Review.*

Persistent Hæmorrhage in Extraction.—Apply tannic acid locally and administer as follows: ℞ Gallic acid, ʒ i; aqua cinnamon, ℥ iij. Sig. Tablespoon every hour till hæmorrhage ceases. Rinse the mouth freely with hot water. Gallic acid is easily assimilated, is rapidly transported by the blood reaching the bleeding vessels promptly through the route of the circulation; does not induce constipation, increases the coagulating properties of the blood.—Otto Arnold in *Cosmos.*

Method of Removing Pulps.—J. W. Beetham, writing in the *Digest*, describes his method as follows: After applying the dam and washing out cavity with warm water and then with pyrozone, remove all debris and insert a small pellet of cotton saturated with carbolic acid. Then take 4 per. cent solution of cocaine in the syringe, tell the patient it will hurt only for a moment, remove cotton and place in the cavity a soft rubber plug, pass needle through and well into pulp, and inject part of the contents. In two or three minutes the whole pulp can be removed painlessly by means of a barbed brooch.

Nausea from Chloroform Anæsthesia.—Where an operation under chloroform has been finished, pour vinegar upon the mask until it is well saturated, and leave the mask in place. As the vinegar evaporates more should be added. This simple procedure has a marked effect in preventing or modifying the nausea after chloroform anæsthesia. It was first advised by a French physician, who says that it acts by the vinegar's forming a non-irritating combination with the chloroform vapor already changed in the lungs.—*International Journal of Surgery.*

Novel Root Filling.—Dr. L. G. Noel, of Nashville, Tenn., sends to *Items of Interest* a description of a unique method of filling root canals by means of thorns from the prickly pear, samples of which he sends with his letter. Dr. Noel dries the root as for other filling, then fills the apex with a solution of gutta percha and aristol in chloroform. Fifty grs. aristol to an ounce of chloroform, adding red gutta percha to make a thick cream. The outer layer of the thorn is then severed by running a knife around it at the point where it is desired to break it off, and it is then tapped lightly to place. The thorn may be soaked in creasote before using.

Medical Department.

Edited by A. H. BEERS, M.D., C.M., D.D.G., L.D.S., Montreal.

DEGENERACY RELATED TO DEFORMITIES OF JAWS AND IRREGULARITIES OF TEETH.—E. S. Talbot contributes to *The Dent. Rev.* (No. 4, April 15, 1898) results of twenty-one years of study of causes of deformities of jaws and teeth in embryology, neurology, anthropology, sociology, criminology in public institutions here and in Europe. Morel and Lambroso had in their laws of degeneracy neglected the jaws and teeth. Spitzka, of New York, and Kiernan, of Chicago, had supplied the neglect in laws which covered the jaws and teeth, as outlined in the author's paper in *Inter. Dent. Jour.* (February, March, and April, 1897), in which he claimed the jaws and teeth the most important indexes of the physical nutrition of the individual from conception to full growth. Treatment of jaws and teeth, therefore, is more important than filling and replacing. The coming dentist will have to expand jaws and correct irregularities of teeth more than to fill teeth, substitute others and treat pyorrhœa alveolaris; he will, therefore, have to study causes in order to treat the deformities. Kingsley, in his "Oral Deformities," published in 1880, had found no more irregularities in idiots as a class than in the lower orders of society; in both amply developed jaws and teeth were the rule; narrow, pinched, and V-shaped maxillæ and dental arches the exception. The author has under observation a young man whose head is like that of an anthropoid ape—small, with receding forehead, protruding superciliary ridges, small eyes with large sockets, high and large cheek-bones, small flat nose, big protruding jaws with massive rami and very large teeth, and especially prominent cuspids. Size of occiput alone differed from the ape type. He was animal in appetites, and at 29 became insane. "When arrest of the face takes place, the shape reverts to that of the anthropoid ape." In scale of evolution the forehead becomes prominent and the jaws recede. The evolution proceeded from the Egyptian type to the Roman, and from that to the form in which the face reached the perpendicular line of Camper, which the author regards as the representation of the highest mental and physical development. At this point the human jaw is large enough to contain thirty-two sound and healthy teeth. In the past 1000 years there has been a decrease in the size of skulls of half an inch. "In cases of arrested development and contracted dental arches, at the present time, by actual measurement the decrease is from one to one and three-quarter inches." While bones of the body develop from a nucleus, the teeth calcify from the periphery; are not influenced by individual defects after birth because of the early period at which they calcify, and are as large to-day as 3000 years ago. Hence, if jaws become too small for the large diameter of the teeth, a break in the dental arch must ensue, and also irregularities of the teeth follow. Few contracted jaws are to be found among the foreign degenerate classes, as seen in our public institutions. In the English-speaking people this is a common stigma. The author in his trip to Moscow visited all countries of Europe except Portugal and Lapland, and in all except Germany, Austria, Holland, France, Norway, Sweden, and England, contraction of the jaws was not observed ; in the four first-named exceptions the percentage was very small, in the three last it was very large. In most races of the world the perpendicular line of Camper's triangle has not been reached ; in most Scandinavians and Anglo-Saxons it has been reached : the Swedes and English have passed far within it. In New England the same development has been gained as with the English, but not so generally is this true of the Middle and Western States on account of intermarriage with other nationalities. Observations of 10,000 faces from a street corner of London showed 82 per cent. with angles within the perpendicular. Of 3000 London school-children 93 per cent. were beyond the perpendicular. Degeneracy of the human body is brought about by vicious habits, excesses, worry, fright, exhaustion, malnutrition, eruptive fevers after birth—all more efficacious on naturally degenerating structures, such as the face, jaws, teeth, and appendix vermiformis than on other structures. Complete arrest of development of well-formed face or appendix vermiformis may take place as result of a constitutional disease before the sixth year. It may afterwards be transmitted as inheritance. Sufferers from hypertrophied nasal bones, mucous membranes, or polypi, or appendicitis are mostly degenerates. High and contracted vaults are not due to mouth-breathing, but to interaction of evolution and degeneracy. The vault is not pushed up, but is built downward by a lengthening of the alveolar process owing to the long rami. The presence of more than thirty-two teeth is atavism, a return to the type of lowest primates with forty-four teeth. If jaw is arrested, reversion to reptilian type in the V-shape results ; or the sides may form the saddle of the carnivoran type—the formation of each being purely mechanical, due to the order of eruption of teeth. The arrested jaw is inherited, but not the deformed dental arch. In 3000 models parent and child were not alike. When the third molar and lateral incisor are missing it indicates degeneracy at conception and arrest of the jaws as well.—*American Medico-Surgical Bulletin, July 10th, 1898.*

THE CONDITION OF THE SALIVARY DIGESTION IN ANÆMIA.—Hamill (*Phila. Med. Jour.*, Jan. 22, 1898) states that there has been comparatively little work done as regards the ferment power of the saliva in pathologic conditions. The researches of Uffelmann showed that in cases with moderate fever the activity of the salivary ferment remained unchanged, while in cases accompanied by high fever, especially with loss of strength, its diastatic power was almost entirely lost. In ill-nourished, sickly persons, Butjagen found the salivary ferment reduced in activity. In an extensive series of studies upon the subject, Jawein arrived at the following conclusions: (1) The quantity of saliva in mild febrile diseases is increased and its ferment action unchanged. (2) In severe febrile diseases the quantity of saliva is decidedly lower and its amylolytic action increased, the ferment evidently being secreted in a saturated condition, an important lowering of the total ferment resulting. (3) After the crisis the quantity, as well as the ferment power of the saliva, is increased. (4) In acute, long-lasting febrile diseases, the quantity of the saliva is not infrequently normal, but its amylolytic action is sub-normal. (5) In pulmonary tuberculosis, even in severe cases, the quantity of the saliva is not lowered, and its ferment action is normal. Not until a few days before death is the quantity lowered, but even then the ferment action remains unchanged. (6) In chronic nephritis the salivary quantity is diminished and its amylolytic action not seldom abnormal. (7) In ascites the quantity of saliva is lessened, while the ferment action suffers but little change. (8) In long-lasting, debilitating diseases, such as scurvy, Addison's disease and diabetes the total ferment power is often diminished. In studying the ferment power of the saliva, the author has used an abbreviation of a method suggested by Jawein, for the purpose of selecting the saliva to be examined. After having the mouth of the subject thoroughly rinsed with water, the saliva formed by a moderate amount of sucking of the tongue was expectorated through a period of one-half hour and collected, the amount of saliva secreted in this time being from 15 to 25 c.c. For the purpose of estimating the diastatic power, two methods may be employed. The principle of the first depends upon the amount of sugar produced when a given quantity of saliva acts upon a given quantity of a standard starch solution for a fixed time at a given temperature—a pure potato starch, thoroughly washed and dried, being used in the preparation of the starch solution. The second method employed was that of Roberts, which consists in ascertaining the amount of starch solution, of known strength, which can be transformed by a unit of measure of the diastatic solution to the point at which it ceases to give a color reaction with iodine in a unit of time and at a fixed temperature, Roberts choosing, arbitrarily, as a unit of measure of the diastatic solution, 1 c.c., and as a unit of time five minutes. Both methods are given in detail by the author, each having been applied by him in numerous instances. In order to avoid variations in one's results it is necessary that the saliva to be tested be collected through a uniform period of time, as that secreted through the first moments of stimulation is stronger in ferment power. Twelve cases are given by the author as having been experimented upon: One of leukæmia, six of chlorosis, three of chloranæmia, and two of pernicious anæmia; the results being as follows: In all the cases the specific gravity and alkalinity were normal. In the one case of leukæmia, both the quantity and the amylolytic action of the saliva were normal. In the six cases of chlorosis, four were normal in quantity and ferment power, one was normal in quantity and slightly deficient in diastatic power, one, the subject of acute bronchitis, being slightly deficient in both. Of the two cases of pernicious anæmia, the more advanced showed a very decided sialaporia, with no change in the diastatic activity; the other being normal, both in quantity and ferment power. The conclusion reached from these results is that anæmia *per se* does not give rise to any change in the ferment activity of the saliva, which is worthy of note.—*American Medico-Surgical Bulletin*, *April 25th*, *1898*.

BRITISH DENTAL ASSOCIATION.—The eighteenth annual general meeting of this Association commenced at Bath on Friday, May 27th, with an informal reception given by the President and members of the Western Counties Branch. On Saturday morning about two hundred members attended the opening business meeting under the presidency of Sir Edwin Saunders, who occupied the chair, in the absence through illness of Dr. Theodore Stack, of Dublin. After the routine business, the chairman related a number of interesting and amusing incidents which had occurred to him during his prolonged term of practice, and then inducted to the chair Mr. W. A. Hunt, M.R.C.S., L.R.C.P., of Yeovil, who delivered his inaugural address. After lunch several papers were read, among others one on Dental Cysts by Mr. J. G. Turner. He maintained that there were held to be two possible origins of dental cysts: (1) from paradental epithelial remnants found in the alveolo-dental ligament, (2) as a sequel of a chronic abscess or breaking down of a granuloma. On both theories a septic inflammation due to a "dead" tooth was the starting point, and they might be referred to as the epiblastic and mesoblastic inflammatory theories. The results of investigations were in favor of the epiblastic theory. He had cut sections of seventeen cyst walls, and had found epithelium in sixteen. The seventeenth was a small swelling, and might have been only a quiescent chronic abscess. He had been able to trace the development of epithelial dental cysts from paradental remnants through (1) masses and cylinders of epithelium found in chronically inflamed alveolar dental ligament; (2)

epithelial reticula formed by growth and branching of masses and cylinders, and forming small tumors attached to roots—epithelial root tumors; (3) definite small cysts attached to roots, containing a semi-solid mass, and lined by epithelium, formed by degeneration of the central cells and growth at the periphery; (4) a fully formed dental cyst, lined by growing epithelium and containing a translucent viscid fluid with crystals of cholesterin in suspension. Epithelial root tumors were of common occurrence, and in one case columnar ciliated epithelium was found lining a cleft. In the case of a large dental cyst ciliated epithelium was also found, and in the walls were numerous irregular acini. A cyst of the gums was described, and the name "gingival" cyst proposed. It occurred at the site of a chronic discharging sinus connected with a "dead" tooth. The cyst was epithelial, and due to the growth of one of the glands of Serres. It was pointed out that both in dental and gingival cysts the crusts, the irritant, and the tumor were demonstrable. A dental cyst was connected usually with the teeth most commonly found carious; its growth was progressive, but never caused pressure-pain; it might inflame and suppurate, even long after the extraction of a tooth. It was a smooth non-lobulated tumor, hard or tense, fluctuating in its most prominent part, with crackling around, or fluctuations all over, with an edge of bone at the periphery, according to the stage of growth. Its contents were serum albumen, serum globulin (abundant), nucleo-albumen (small amount). crystals of cholesterin, but no fats or fatty acids, no mucus or true mucoid, and no reducing body produced by boiling with acids. In either jaw the cyst hollowed out the body, expanded, thinned, and perforated the compact plate, presenting chiefly on the outer side. In the upper jaw it might present in or push up the antrum. Dental cyst had to be diagnosed in the early stage from solid tumor, from chronic abscess, chronic empyema, and cystic disease of the antrum, dentigerous cyst, and gingival cyst. Exploration was urged. Difficulty of diagnosis occurred chiefly in the early stage; pain and signs of inflammation pointed to chronic abscess, but the two processes might go on side by side in connection with the same tooth. Gingival cysts occurred in the muco-periosteum of the gum, outside the bone. The paper was illustrated by lantern slides of microphotographs prepared by Mr. Douglass Gabell.—*British Med. Journal, June 4th, 1898.*

DRAINAGE IN EMPYEMA OF THE ANTRUM OF HIGHMORE.—E. W. Roughton (*The Laryngoscope*, March, 1898) tells us the antrum can be opened and drained through the nose, through an empty alveolus or through the canine fossa. With many rhinologists the nasal route is the favorite method of draining the antrum.

The writer, however, uses the alveolar method of drainage almost exclusively. Even when the canine-fossa operation is likely to become necessary, it is advisable to establish an alveolar drain, because an opening in the canine fossa, although well adapted for cleansing out the antrum, is unsuitable for drainage. Should the teeth be sound, the drainage should be provided through the inferior meatus of the nose. The alveolar opening may be made with one of the different forms of perforator, or by means of a burr worked with the dental engine. The anterior buccal socket should be selected. It is possible to open the antrum through the inner or palatine socket, but it is also possible to perforate the floor of the nose by mistake. When the opening has been made, an efficient drainage-tube must be fitted and attached to the adjacent teeth. To be efficient, an alveolar tube should have a lumen of not less than an eighth of an inch, should be the proper length and should have a plug which can be inserted at meal-times. The tube should be of such a length that its upper opening is flush with the floor of the antrum. The length of the alveolar perforation (and therefore of the tube that is to be fitted) can be measured by means of a small *bougie à boule.* The head of the bougie should be just small enough to pass easily into the antrum ; on withdrawing it, the finger at once detects when the head impinges on the upper end of the canal. The thumb-nail being then placed on the bougie opposite the margin of the gum, the instrument is withdrawn and the length from the nail to the neck of the bougie carefully measured. The author concludes his paper, remarking that it is well to remember that all cases of empyema antri are not alike. In some the lining membrane secretes pus, but is not otherwise altered. These cases will be cured by drainage. In others the antral lining is so altered that it is incapable of being restored to the normal condition. For these curettement is necessary. There is yet another class of cases in which the antrum is not a producer, but simply a receiver, of pus, which has been generated in the frontal sinus or fronto-ethmoidal cells. In these cases recovery cannot be expected until the source of pus has been detected and efficiently treated.—*American Medico-Surgical Bulletin, April 25th, 1898.*

PERFORATING ULCER OF THE MOUTH.—Letulle (*La Presse Medicale*, April 2nd, 1898) records an instance of this rare condition in an alcoholic man, aged fifty-one, who presented fairly well-marked symptoms of tabes. The teeth in the left half of the lower jaw were all wanting except the central incisor, those on the right side being healthy. In the upper jaw there were only three teeth left, and apart from the persisting teeth the alveolar border was atrophied ; on the right side of the upper jaw there was a cavity involving the alveolar border and the hard palate, opening like a cone into the middle meatus of the nose. The mucous membrane lining it was pale, thickened, but not ulcerated; its sensibility was much impaired. The patient was not aware of this condition, but on being questioned he said that liquid food had for five months come through the right nostril. This lesion is rare; Baudet has collected eight cases chiefly on the subject of tabes. It may be unilateral or bilateral, but always occurs in the same situation. As to the explanation of the lesion, there are two views: (1) that of Galippe, that it is the result of alveolar pyorrhœa aggravated by tabes; and (2) that of Baudet, that it is an atrophic tabetic lesion due to the fifth nerve being affected, which begins by loss of the teeth and atrophy of the jaws, and sometimes terminates by ulceration and perforation into the antrum. The decision between these theories must be left to the future, but probably a combination of the two would be most satisfactory. At present only one case has been examined after death, and that very incompletely.—*British Medical Journal, July 16th, 1898.*

MOST of the special measures for the treatment of fractures of the lower jaw are not only difficult, but also, by their interference with cleansing of the mouth and drainage are not infrequently complicated by the formation of abscesses. Hausmann has devised an easy method that overcomes these objections, the fracture being treated on the principle of extension. A strong thread is fastened to the incisors of the jaw and carried over a roller at the foot of the bed, and to it a weight of from half to one pound is attached. This permits irrigation and drainage of any wound that may be present. The extension can generally be dispensed with at the end of eight or ten days. Eight cases so treated yielded perfect functional results without the formation of abscesses in any. For those exceptional cases in which all the front teeth of the lower jaw are absent, Seelhorst has devised an ingenious apparatus which fits in the mouth and under the chin, and to which the extending weight can be attached.—*Phil. Med. Journal, June 4th, 1898.*

VARIETIES OF DENTAL CALCULI.—H. H. Burchard (*Dental Cosmos*, Vol. XL., No. 1, 1898) distinguishes the following varieties of dental calculi: 1. Yellowish-white deposits found upon the buccal surfaces of upper molars. They are soft and friable. They dissolve readily in dilute hydrochloric acid with the evolution of carbon dioxid, and leave but little detritus and apparently no distinct evidences of an organic stroma, *i.e.*, they are largely composed of calcium carbonate, with a minimum admixture of organic material. 2. This class includes the calculi found upon the lower anterior teeth, opposite the ducts of the submaxillary and sublingual glands. They are made up, in large part, of calcium phosphate, combined with mucin. 3. This variety comprises the small, dark, hard, scaly deposits found beneath the gum-margin, which excite the most common and most curable variety of pyorrhœa alveolaris. This calculis is at times associated with the first and second varieties. 4. The fourth variety consists of those small nodular calculi found deep in the pockets of pyorrhœa cases and upon the apices of the roots in cases of long-continued apical abscess. 5. This includes those deposits which are found upon the sides of roots in cases of gouty necrosis of the pericementum, and which exhibit in some degree a reaction to the murexid test. These deposits in their typical form are irregular and more friable than either the sublingual deposits or other root-deposits named. The bulk of the calculus is made up of calcium phosphate, a common associate of deposits of urates in other parts of the body.—*American Medico-Surgical Bulletin, April 25th, 1898.*

SALICYLATE OF SODIUM IN TOOTHACHE.—Dr. Frederick C. Coley (*Practitioner; North Carolina Medical Journal; Southern Clinic*, June) believes salicylate of sodium to be the best remedy in toothache arising from catching cold. A dose of fifteen grains will usually relieve the pain promptly, and if repeated every four hour the inflammation may entirely subside, leaving the carious tooth to be disposed of according to circumstances. Fifteen grains of sodium salicylate, with fifteen minims of tincture of belladonna, will often procure refreshing sleep instead of a night of agony. Dr. Coley's first experience of it was on his own person, and since then he has used it with many brilliant successes and few failures. It is especially valuable with children, where extraction of teeth is to be avoided, if possible, lest the development of the maxilla should be injured.—*N. Y. Med. Journal, June 25th, 1898.*

A SUBSTITUTE FOR THE GUM LANCET.—Dr. Wallan (*Alkaloidal Clinic*, May), in reply to an article by Dr. Love in that journal, urges that when irritation from non-advancing teeth occurs, it is because the normally flinty teeth, to which the soft gums can offer no practical resistance, are suffering from lack of nutrition. While admitting that the gum-lancet gives temporary relief and possibly faintly stimulates the local nutritive process, yet, since it supplies none of the lacking elements for which the child's system is so loudly clamoring, and transforms normal into cicatricial tissue, which is ten times as hard for the tooth to displace, it is radically wrong, an outrage to Nature, and an imposition on the helpless little sufferer. In place thereof the writer recommends correcting any faulty conditions in the infant's alimentary tract and placing it upon a mixture of the calcic salts, approximating the proportions as nearly as possible to those found in the teeth. For example :.

Calcium phosphate, two parts; calcium carbonate, three parts; sodium phosphate, one part. Mix. Triturate to an impalpable powder. Direct: Three to five grains or more with other food, three or four times a day for a week, then once a day, p. r. n. The fluoride salt might be a desirable addition. In cases of anæmic children a trace of ferric phosphate is added. While wholesale condemnation of the gum lancet is as much to be deprecated as its indiscriminate use, like all the extreme views which come in waves over the profession, there is doubtless much practical sense in the course recommended by Dr. Wallan of nourishing the teeth.—*N. Y. Medical Journal, June 4th, 1898.*

TREATMENT OF ANKYLOSIS OF THE LOWER JAW.—Karl Roser (*Centralbl. f. Chir.*, Berlin, 1898, Vol. IV., p. 122) has had as a patient a man twenty-two years of age suffering for the past four years from complete ankylosis, caused by a severe bruise to the face. A T-shaped incision was made, and the condyle, after considerable trouble, incised. A mouth-gag was then introduced and the jaws forcibly separated, until a thumb could be placed between the front teeth. In order to keep the jaws from coming together again, a cork was fastened between the molars of the upper and lower jaws. A gold-plate, kidney-shaped and about the thickness of a ten-mark piece, was bent and curved so as to fit transversely in the joint. It was put in place and a deep row of sutures used to bring the tissues into close approximation. The skin was accurately sutured. After ten days the cork was removed and passive movements begun. One month after the operation the patient was able, by himself, to open the teeth 1¾ ctm., and by using the mouth-gag 2½ ctm. were reached.—*American Medico-Surgical Bulletin, April 25th, 1898.*

TONSILS AND ADENOIDS AS CAUSES OF MALFORMED MAXILLÆ AND IRREGULAR TEETH.—Wm. A. Mills (*Jour. of Am. Med. Assn.* pp. 980-1, April 23rd, 1898) states that from observation of twenty-five years he has found that any inflammatory lesions in children of four to twelve years that obstruct the nasal or oral passages are the chief agents in causing malformed jaws and abnormal and alignment of teeth. A child of seven brought to him to have a tooth filled for relief of pain in right ear and right angle of inferior maxilla, was found to have almost complete obstruction of the nasal cavities; the face was pale, anæmic and haggard. A small cavity in a molar tooth was filled without relieving the pain. Depression of the tongue showed enlarged tonsils almost touching in the median line, from one of which pus flowed out on introducing the depressor, causing relief of the pain. The patient was sent to a rhinologist, who removed the adenoids and reduced the tonsils. The child in six months was a bright, rosy-faced boy.—*American Medico-Surgical Bulletin, July 10th, 1898.*

THE DIASTATIC POWER OF THE SALIVA.—Within recent years a number of observers have claimed that the diastatic power of the saliva was found to be in a number of small round morphological elements. The authors, Bocci and Mosencci, have been testing this, and come to different conclusions, *Arch. Ital. de Biol.*, Vol. XXVIII., p. 72. They centrifuged the salivary secretions and thus were able to separate the morphological elements. These they found had no diastatic action whatever, whereas the fluid portions acted in the usual manner. They thus believe that they have definitely settled the question that the enzyme is in solution. —*American Medico-Surgical Bulletin, July 10th, 1898.*

DENTAL HEMIPLEGIA.—The Denver *Medical Times* for May, quoting the *Virginia Medical Semimonthly* for March 25th, quotes the report of a case by Dr. J. D. Eggleston, in which hemiplegia was promptly and completely cured on the removal of a sound though sensitive " wisdom " tooth.

Tit Bits from the Editors.

IF the journals are not as good as we would like them to be, it is because we do not furnish the materials. They simply print what we utter. The publishers call for bread, and you give them a stone ; you expect brick and you give them no straw.—*Register.*

THE dental journal is certainly the vanguard in our march of progress. Our dental literature has contributed more to the advancement of the profession, scientifically, than any other branch of the educational trio. It is as an outgrowth of its influence that we have the college and the association.—*Dental Register.*

FORTY-SIX young men were admitted to practice law in the province of Quebec the other day. The number is large considering that the profession is over-crowded already. But what is true of law is also true of the other learned professions. Hundreds of lawyers in the cities have hard work to eke out a living. Some one has said that the most dangerous member of a community is a half-starved lawyer. Whether that be so or not, the fact remains that too many young men are entering the professions and failure is the fate that awaits a goodly proportion of them. There is always room at the top, however, and it becomes after all a question of the survival of the fittest.—*Waterloo, Que., Advertiser.*

Reviews.

Orthodontia, or Malposition of the Human Teeth: Its Prevention and Remedy. By S. H. GUILFORD, A.M., D.D.S., Professor of Operative and Prosthetic Dentistry, Dean of the Philadelphia Dental College, etc. Approved by the National Association of Dental Faculties as a text-book for use in the schools of its representation. Third edition, revised and enlarged. Philadelphia: Press of T. C. Davis & Son, 529 Commerce St. May be ordered through any of the dental depots advertising in the DOMINION DENTAL JOURNAL. Pp. 254. Profusely illustrated.

The dental profession has received several very important additions to the literature of Orthodontia since Kingsley wrote. Almost coincidently with the issue of the second volume of Farrar's monumental life-work, comes this new edition of the concise work of Guilford, an edition so much improved as to make its predecessors obsolete. The prevention of irregularity of the teeth, as well as its remedy, is to a large number of practitioners the *bete noir* of practice; and while apparent success is attained by rude methods, by injudicious extraction in ignorance of the physiology and dynamics of tooth-movement and the character of the tissues involved, there is no longer excuse for such imperfect practice. Any one who has acted as an examiner of students in orthodontia, must frequently have been startled by the fact, that among the greater number who could suggest methods of regulating cases set before them in clinics or in plaster model there was a general lack of scientific explanation. The author forcibly supplies valuable information in this respect in Part I., information which should be deeply ground in the mind and memory of the student. The combination of surgical and mechanical treatment has not kept pace with the slower methods. The experience in that direction of Dr. Bryan, Dr. Geo. Cunningham, Dr. Farrar, and Dr. Talbot are not by any means singular in their success. Failures recorded may have been due to the absence of aseptic treatment; but the author predicts that the slower methods will yet be largely supplanted by surgical methods. Those reported at the World's Dental Congress, in 1893, by Dr. Cunningham, of Cambridge, England, showed a measure of success to warrant more extensive practice.

A chapter might have been devoted to the evils resulting from malformed, misplaced, and movable apparatus, which are frequently more numerous than those to which the author refers, in those resulting from irregularity *per se*. Many practitioners, skilful in all other departments of operative and prosthetic practice, are wofully deficient in the ingenuity which can devise for each particular case the best and safest apparatus. To regulate misplaced teeth, and to have as a permanent result destruction of the gingival margin, pyorrhœa alveolaris and other such consequences, is "paying too dear for the whistle." Our students decidedly need more thorough tuition in this important branch of study, and there never was a time when they were so well supplied with reliable literature on the subject.

Lehrbuch der Conserverenden Zahnheilkunde. Text-book of Conservative Dentistry. Second edition. VON W. D. MILLER, a.o. Professor at the University of Berlin. Published by Georg Thieme, Leipzig.

The above work has been carefully revised and enlarged by the author. He has kept pace with the advancements and improvements made in dentistry since the publication of the first edition, and has given the profession the benefit of it in this. A very good chapter is given on Cataphoresis, also one on Formalin, Formagen and other similar new preparations. The last chapter of both editions is devoted to the treatment of deciduous teeth. This chapter is too short for this subject, and the author might have devoted a number of more pages to it. In other respects the book is well gotten up, and is all that can be desired.

C. E. K.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE,
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

ASSOCIATE EDITORS:
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A. H. Beers, M.D., C.M. (McGill), D.D.S., L.D S., COOKSHIRE, QUE.

EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, Room 97, Confederation Life Building, Toronto, Canada.

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A FREE JOURNAL TO ONTARIO LICENTIATES.

The *Journal of the British Dental Association*, the *British Medical Journal*, and others we could name, are sent free each month to members of the associations which they respectively represent. The political advantage of these experiments is no longer in question. The journals have become the bulwarks and best defenders of the interests of medicine and dentistry, and the numerical strength of the associations has been largely increased. It is very apparent that the one hundred and eighty-two licentiates who, out of the many hundreds, paid the annual fee last year in Ontario, would be very greatly increased if some such consideration were held out to them. The payment of an annual fee is not popular, and why should it be when it is quite clear that a large percentage simply snap their fingers at all attempts at collection, and become unnecessarily antagonistic? Large numbers take no interest in the elections; they do not seek election themselves, and feel no interest in any ticket. They have paid handsomely to enter the profession, and do not care to be taxed for the benefit of others. Whether they are right or wrong, these are their opinions, and however complacently we may try to look at it, the fact stares us in the face, that a very large majority of the licentiates of Ontario refuse to pay the annual fee, and therefore voluntarily forfeit their vote. The difficulty is intensified when arrears have accumulated for several years.

Two thousand dollars more are being spent on the College building. Ontario has reason to be proud of the College, and no reason to grudge the disbursements in its connection. But it is only just to consider occasionally the wants of the licentiates themselves;

and it does not seem too much to expect, that out of the large revenue received, some way could be devised to supply free to licentiates in Ontario the only local journal we possess. If it is desirable to interest the members of the profession ; to keep them informed of the doings of the powers that be ; to take away any suspicion of cliquism or party pull—then it is desirable that every licentiate should be free of the annual tax and supplied with the JOURNAL. If these things are not desirable ; if it is in the interest of the profession that we should have small meetings and minority representatives, and that a few enthusiastic members should bear all the burden and blame, then the present method is the best. The licentiates can speak for themselves.

ROYAL COLLEGE OF DENTAL SURGEONS.

We again remind our readers in Ontario that the nominations take place next month (November), and the elections in December. While we have never attempted in any way to influence the vote of the licentiates, we feel justified in asking for more widespread interest. The services being rendered, and to be rendered, by the responsible officers are most important.

UNIVERSITY OF BUFFALO

Dental Department

The Seventh Annual Session will open September 13, 1898, and continue for thirty weeks.

All the lectures and instruction will be given in its own new and complete building, erected for its exclusive use.

The course is a full graded one, each class receiving its instruction by separate lectures and in separate laboratories.

There are three prosthetic laboratories on separate floors, with a full technic course in operative and mechanical work in its own room.

The Infirmary affords more material for practical work than can be utilized, it being frequently necessary to turn patients away.

The Summer Term is open for matriculates without extra expense, the annual fee of $100 being payment for the full year.

Special attention is given in the last part of each term to the preparation of senior students for state examinations.

Senior students attend the clinics in Oral Surgery given by members of the Faculty at the Buffalo General and the Fitch Accident Hospitals.

There are Chemical, Histological, Bacteriological and Pathological Laboratories, each fully equipped with the latest apparatus, and thorough instruction is given by didactic and laboratory courses.

There is in the Museum a very complete collection of skeletons and skulls, scientifically and serially arranged and representing all the classes and orders of animal life, which is used for illustrating the course of lectures in Comparative Dental Anatomy that is each year given.

Students are received for instruction under the qualifications of the National Association of Dental Faculties. They can graduate and become eligible for examination for practice in the state of New York only upon obtaining the qualifications of the State Board of Regents. This is the completion of the work of a three years' high school course before graduation.

The annual announcement and any further information can be obtained by addressing

UNIVERSITY OF BUFFALO—DENTAL DEPARTMENT

Goodrich Street, Buffalo, N. Y.

Dominion Dental Journal

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Original Communications.

THE PRACTICAL VALUE OF CHEMISTRY IN DENTISTRY.*

By H. C. WETMORE, D.D.S., St. John, N.B.

MR. PRESIDENT,—It was not without certain feelings of reluctance that a few weeks ago I consented to write a paper for this joint meeting of the Dental Societies, caused by consciousness of my own inability to treat my topic in a comprehensive and scientific manner, as well as by a knowledge that lack of idle time would render it difficult for me to give any subject proper consideration.

Events which have transpired during the last two or three years, as well as certain experiences which it has been my lot to encounter as a member of an examining board, have been the means of firmly impressing upon my mind that certain of the subjects found on the recognized "list of studies" of our colleges do not apparently receive that attention and consideration at the hands of the teachers, and consequently of the pupils, which they would seem to merit.

Probably if a class of matriculants were given the curriculum of studies required to be taught by a Dental College, and asked to indicate which to them appeared as of the most and which of least importance, whatever might be their opinion as to the former, there can hardly be any doubt that Chemistry would almost invariably be named as the latter.

For a study so fundamental to almost every branch of dental science, to me it would appear that too great a prominence could hardly be given it by those engaged in its teaching, or that too much time and labor could be employed on it by those engaged in its study. If we are to draw our conclusions from the evidence at our disposal, we should conclude that certain of the colleges, supposedly reputable, either make their teachings of it of a very meagre and superficial nature, or they admit to their classes students of insufficient mental calibre to receive and digest such instruction as is imparted. Possibly the error may lie in both directions.

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*Read before the Maritime Dental Association, September, 1898.

To be more explicit: Were matters otherwise, we would hardly expect a graduate of a "recognized" dental college, who had obtained his degree but a few weeks before, to define "*an element*" as "*the smallest part of matter*," or that another who had also been able to write D.D.S. after his name but a month or so, but from a different college, to define it as, "*that part of a substance in a true or pure state.*"

While to the casual observer Chemistry does not appear to occupy the same prominent position in our daily practice that is accorded other branches of dental science, to the initiated it is of equal importance, in that it is more or less directly connected with them, and in that it forms to a greater or less extent the foundation upon which each of the others is erected. And it is extremely difficult to understand how a college examiner could consistently recommend any student for graduation in Materia Medica, Dental Pathology, Metallurgy or Operative Dentistry, whose knowledge of the very rudiments of chemical science was utterly lacking as in such cases as the above mentioned.

It would make a paper of this nature entirely too cumbersome to attempt to indicate wherein Chemistry has a practical relationship to all the various branches of dental science, even if time permitted, consequently I will confine my remarks to its relation to that particular branch, without which the dental profession could never have begun its existence, namely, its relation to dental caries and to the methods of its prevention and arrest.

Apart from its scientific value, it forms an interesting chapter of historical study to trace the advent of chemical science into the causes furnished by the various writers at different dates for dental caries.

One need revert only about one century into dental history to learn that at that time caries was considered as being the direct result of inflammation, and as bearing a striking resemblance to necrosis of bone, or mortification of soft tissues. It is also of interest to learn that at this period writers were a unit in supposing that the initial stages of caries took place in the *dentine*, and from there the inflammation extended, causing death to all the adjacent parts.

The first divergence from this view was when certain writers maintained that sometimes caries began upon the surface of a tooth, and the inflammatory theory then partook of a dual nature, and caries was described as being of either external or internal origin. Not until the year 1830, or almost in recent times, was this theory questioned; and almost simultaneously Harris of America, Robertson of England, and Regnard of France, proved by experiment and clinical experience that it no longer was tenable. A few years later Robertson published a "Treatise on the Human Teeth," showing causes of their decay and means of preservation, in which he advanced the theory that caries was the result of chemical disintegration of the tooth substance, and denied the agency of inflammation. This destruction was accomplished, he contended, by the action of an acid which was generated by decomposition of alimentary particles, or of fluids of the mouth suffered to lodge about the teeth. Three years later Regnard published a somewhat similar work, in which he contended that caries was accomplished by an acid generated by decomposition taking place at the very point where its effects were shown.

We must bear in mind that at the time these authors wrote the best of human thought and intelligence, as well as the deductions from all observations except their own, were diametrically opposed to their theory (a theory which all the labor of intervening years up to the present time has hardly been able to demonstrate). And their writings appear the more remarkable since, at that time, the laws of fermentation were very little known, and they had not means of confirming their suppositions by experiments made either by themselves or by others.

It was curious to notice that once the chemical theory was advanced, how prone many men were to run to the opposite extreme, and assert that if acids caused decay they would necessarily, from their general distribution, act upon all parts of the teeth, instead of attacking only particular parts. Black in his writings, which were founded upon his own experimental results, says: "I may say that the acidity or alkalinity of the general fluids of the mouth or of the food plays but a small part in the case, provided these reactions be not in such degree as to modify materially the act of fermentation taking place in the out-of-the-way points about the teeth. The teeth may decay when the fluids of the mouth are habitually acid, or when they are habitually alkaline. The condition governing the beginning and progress of decay is neither of these, but is dependent directly on the lodgment of substances at particular points and their fermentation with the production of an acid. It is in this manner that caries has its beginning, and its progress is maintained by the continuance of this act of fermentation."

Perhaps no one person has thrown as much light on the processes of fermentation as exhibited in the early stages of caries as Prof. Miller, of Berlin. He, in a very extensive series of experiments, most carefully planned and executed, was enabled to establish truths which heretofore could be held but as conjectures.

In the first of these he established the initial stage in the chemical theory, namely, that saliva, to which has been added a sterilized organic body as starch or sugar, will become acid in four or five hours, indicating the splendid opportunity organisms of the saliva possess in the mouth during certain periods of the day or night, particularly the latter, to uninterruptedly propagate and exert their destructive influence on the surrounding teeth. It was already known that an active unorganized ferment ptyalin already existed in the saliva, but Miller demonstrated the organism producing the acid to be very different in its nature and properties; that it was an organized ferment, and was perfectly capable of sustaining and reproducing itself in a suitable pabulum. To determine the nature of the acid produced by this process of fermentation was a problem of no great difficulty, and a few experiments proved what was already conjectured, that it was no more than the ordinary ferment, lactic acid.

More important to the development of dental science was the demonstrating of artificially produced decalcification and caries in a sound tooth, by placing it in a suitable pabulum: a solution of beef extract and cane-sugar, which after being sterilized was infected with the fungus already referred to, thus proving the correctness of the chemical theory. With these agents, fungi, and a suitable soil on which it may feed and luxuriate, aided indirectly by a uniform temperature, moisture and free oxygen, it requires but a very superficial knowledge of the nature and habits of fungi to comprehend how an acid, their product, will almost invariably be found, not necessarily in the entire mouth, that may be alkaline, but in spaces adapted for the lodgment of food particles, in the fissures, sulci and interdental spaces of the teeth.

We do not wish to be understood as stating that lactic acid is the only acid, or even the only destructive acid, of the oral cavity. The acidity of the mucus secretion is well known, and while it does not possess decalcifying properties to the same degree as lactic acid, it assists very materially the destructive influence of lactic acid in cavities bordering upon the gum margin, if indeed it is not the sole cause of decalcification in such cases.

Other fungi than the one we have been considering are also to be found in the secretions of the mouth, Black having recognized as many as twenty-two varieties, and whatever their influence may be, it appears evident that so far as caries is concerned they are not particularly harmful.

Having established the fact that caries is to a certain extent the direct result of the action of ferment acids on the teeth, it becomes us next to ascertain how we can scientifically most effectually combat their influence, or prevent their production; and secondly, how we can prevent already decalcified dentine from further or complete destruction.

By thorough, repeated and systematic cleansing of the oral cavity and teeth we may so diminish the amount of fermentable substance as to very much lessen the production of acids by fermentation. This is so evident that comment is unnecessary. By a repeated application of alkaline substances one may to a very considerable extent counteract the decalcifying action of acids before extensive loss has been sustained. While, by a proper and intelligent use of antiseptics, we may destroy the organisms themselves, or at least render them inactive. It is this method which is specially applicable in the stage of caries following decalcification, and the one which at present we are considering.

Even here we must constantly bear in mind that a previous thorough cleansing is indispensable. There is no solution, alkaline or antiseptic, applicable to the human mouth which will penetrate between the teeth, or to the bottom of fissures or cavities, when these are filled with food or other debris, in sufficient quantity to have an appreciable effect upon either acid or organism; so that before any washes can be expected to accomplish anything whatever, must first come a thorough use of tooth brush, tooth pick and floss silk. To furnish formulæ is not our object in this paper, but the primary object in writing any medical prescription is to first ascertain the cause of the ailment, get at the first principles of the disease and combat and, if possible, destroy them. Reasoning from what we know of the more prominent causes of caries, an antiseptic, effective in its workings, yet of a nature which would cause no injury to the delicate tissues of the mouth, with which it must be brought in contact; and if possible, of alkaline reaction, would appear to combine the properties essential to the case.

Where caries has progressed it is naturally next to impossible, in many cases, in the preparation of cavities to remove all of the affected dentine, and in such cases it is desirable, as far as possible, to insert fillings which are not only antiseptic at the time of insertion, but which will continue to permanently exercise antiseptic influence. Of the filling materials most commonly used most are antiseptic at the time of insertion, but gradually lose their antiseptic properties.

Old fillings of phosphates are found to possess but a slight antiseptic power.

Old fillings of gold and tin combined have also a slight antiseptic power, and old amalgam fillings, when not containing copper, have very much less, if in fact they can be said to have any at all. But if they contain copper the result is very different, it has then a very marked continuous antiseptic effect ; the salts permeating the dentine of the teeth so filled, and rendering it (the discolored dentine) decidedly more powerfully antiseptic than any of the other filling materials. It, however, has its disadvantages. But what we would like to impress is the importance of a knowledge of the chemical effect of the ingredients, upon organisms and truth structure, of the amalgams we use, and make our selections to meet the requirements of our individual cases, even though some other varieties may be represented as being "just as good," and can be furnished by a rival house at a somewhat lesser cost. Any reliable house ought to be willing to furnish the formulæ of their amalgams if they expect intelligent dentists to employ them in their practice.

We will refer to but one other instance of the practical value of chemical science to the dentist in his professional duties, the chemico-electric effect of the various metals more commonly placed in the oral cavity in either operative or prosthetic operations. Electricity at the present time is occupying such an important position in the various departments of dentistry that it is difficult to comprehend how a course of dental study could approach completeness without including a fair treatment of its more common principles and application.

Leaving to inventors its usefulness as a power furnishing agent, either for the revolving of a wheel or driving a medicine through a tissue, we will confine our attention to some of the simpler phenomena of galvanism as they come to our attention in our daily operations.

We aim to be a progressive profession, and if we are to continue a recognized profession we must continue to be as progressive as our brothers in other walks of life, and as progressive as the age in which we live. We have all observed phenomena in our operations when both gold and amalgam have been employed, which, without some knowledge of the laws of galvanism, would be rendered impossible of explanation. Observation teaches us that normal truth structure is a non-conductor of galvanic current, while with dentine badly deficient of lime salts, or decalcified by the aid of oral acids, the conditions become the reverse and render it highly conductive and electro-positive as compared with either gold or amalgam. It would be as unreasonable to expect no electric disturbance when these metals were used in proximity to dentine in such cases, as it would be to expect that a copper or carbon plate immersed in a cell containing all the other elements for a galvanic current, should produce no result. In the case of a gold or amalgam filling loosened, the effect is frequently so pernicious that after its removal further operations must for the time being be suspended, allowing the tooth to regain to some extent its normal status.

Kirk says that even in the selection of metal for clasps too great care cannot be exercised, that either silver or gold clasps on a plate of the same metal are apt to be much more injurious than when they are made of a metal different from the plate. That in the first instance the tooth forms the positive and the plate the negative elements of the battery, while in the latter the tooth is left entirely out of the circuit, and what galvanism does exist is simply between the metals of the plate and clasp. It is also a recognized fact that when it becomes necessary to insert a filling under a clasp, an amalgam filling will prove more effective in arresting the progress of caries than an equally well manipulated gold. In most mouths under these conditions, electrical action would manifest itself, and the method which would leave the tooth out of the circuit, as the gold and amalgam would do, would most assuredly protect it from the evil influence of galvanic action. Electro-chemical action in the oral cavity will be found to be greater during the night than the day, on account of the increased acidity of oral secretions during that time. Apart from this greater opportunity for the acids of fermentation to accumulate, the mucus secretion which is slightly acid in reaction, is greater during the night, while the neutralizing effect of the salivary flow, which normally is alkaline, is practically lost, as the amount of saliva secreted at that time is greatly diminished. Ample reasons, it would appear, are thus furnished for the careful removal of all clasp dentines, or other metal appliances, when practicable, before retiring.

Other instances might easily be added, but enough, we consider, has been submitted to warrant us in concluding that a course of dental chemistry, whatever it may include, would be far from complete if it did not embrace the simpler laws and principles of galvanism ; notwithstanding this, the evidence appears to prove the contrary ; were it otherwise we would hardly expect a man fresh from college, with the teachings of three years received still clear in his memory, to furnish the following comprehensive description of a galvanic cell : "*A galvanic cell is composed of two substances ; one is copper, the other is the other.*"

THE EDUCATION OF THE DENTAL SURGEON.*

By FRANK WOODBURY, D.D.S., Halifax, N.S.

I am aware that many differ widely from some of the opinions contained in this short paper.

All will, however, agree at the outset that, everything else being equal, *the man of highest culture is the best man.* It matters not

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[*] Read before the Maritime Dental Association, September, 1898.

whether he has acquired it at the university halls, or by economy of his spare moments, the scale turns for the man of actual culture.

Before the days of dental boards and dental laws every man was a law to himself. The standard of preparation for his life-work was left to convenience, taste, or, perchance, force of circumstances.

We are building to-day on the foundations laid by our fathers in the profession, and we may fittingly make obeisance to them for the magnificent things they accomplished for us ; but notwithstanding all that, I believe we are building on a foundation that never should have been laid.

I grant you that they moved from the blacksmith and barber shop to the office—transformed the tooth-puller into the dental surgeon, and provided colleges where the science and art of dentistry are systematically taught.

It was an immense stride, but, from our point of view, we cannot help but regret that the stride was in the wrong direction. It was a mistake. It was out of harmony with the fitness of things.

A preliminary requirement should have been *a course in a medical college.* Dentistry is a specialty in medicine *by right.*

The contributions that dentistry has made to medical and surgical science are not a few, and there is no reason why it should not stand shoulder to shoulder with other specialties, and immeasurably better than it does, except that its men are not medical men, and dentistry is a separate profession in practice if not in theory.

The added knowledge, the broader outlook on pathology and therapeutics, the larger privileges in surgery would have been of immense value to the practicing dentist.

You may say that dentistry is recognized as a specialty in medicine. It is so declared by every code of *dental* ethics. *We* recognize it all right, but you will agree with me that it receives scant acknowledgment from the medical profession.

The ophthalmologist, aurist, and many other "ists" have full recognition, but when was the dental fraternity honored with an invitation to enjoy the sessions of a medical convention, much as they might add to the interest and be benefited thereby? The reason is not far away. Dentistry is looked upon as a distinct affair, with no practical connecting links.

And why, gentlemen, does not the degree of D.D.S., or D.M.D., or L.D.S. carry as much prestige as M.D. ?

It is somewhat owing to ignorance of the scope of the curriculum of the Dental College of to-day, but largely because the standard of matriculation and the college course of the dental student has not been equal to that required from the student of medicine.

The Dental College has not required as high a standard of matriculation ; the professional course is not recognized as being as thorough nor as long as that of the well-conducted Medical College; also because of having a separate degree, dentistry is naturally placed by itself and takes a different level

We claim that the specialty of dental surgery should stand by the side of all other specialties in medicine, untrammelled, and receive full recognition as an integral part of the great medical whole.

This would have been the case had the Dental Colleges been post-graduate schools for our specialty. Dentistry would then have taken its proper and recognized place years ago, and all the bitter fight would have been saved.

We venture to hope that the evolution is in progress; indeed, there are signs of it on every hand.

The dental degree should by no means be abolished. The specialty has so much that is distinct and unique, that it well merits special recognition. It has a pathology, therapeutics, and Materia-Medica of its own. Its manipulations are complicated and delicate. No specialty *needs* so much preparation as ours.

The medical man does know something of the eye, ear, throat, and any of the other specialties, but he knows *nothing* of dentistry. "Where is the medical man who is not a dentist who can stand at a dental chair and operate five minutes with credit to himself or comfort to his patient?"

There is no department of surgery where more delicacy of touch is needed; none where such a variety of appliances are necessary; none where more scientific diagnosis and treatment are required.

The whole outfit of the general surgeon is not as complicated and elaborate as that of the dental surgeon. A special degree should certainly be retained, but I do think it should express the full size of the field of our specialty, as is generally understood by the terms Stomatology or Oral Surgery.

If I am correctly interpreting the signs of the times, the feeling is growing that the two degrees belong together. The public demands oral surgery from the dentist now, and may (with the number rapidly increasing) feel that they need and must have the general medical and surgical training, and the privileges that accompany it.

The professors in the Dental Colleges feel the need, and a majority of them write M.D. as well as D.D.S. The Dental Colleges feel the need of close contact, and the best schools of dentistry to-day are either departments of universities or are affiliated with medical colleges, and having arrangements whereby both degrees may be secured at a minimum loss of time.

At the last meeting of the National Board of Dental Faculties, a resolution was offered and tabled for discussion next year, which proposes to add another year to the Dental College course. This is adding at the wrong place.

As far as I have been able to gather, and I have taken some trouble to be informed, the idea of a longer course is not so much to add to the lectures on special dental subjects as to give opportunity for those studies that are included in general medicine and surgery. Why. then, if this be so, and the time is to be spent pursuing these subjects, should not the dental student of the future have the recognition that comes from a medical degree? A resolution looking toward a medical degree as preliminary and necessary for the student of dentistry would be more to the point, and much nearer the ideal.

The public are demanding more and more from the dental surgeon. The profession is looking in the direction indicated in this paper. Higher qualifications are demanded from students every year. State and Provincial Boards are raising their standards. As combined in the National Board of Dental Examiners, they are stimulating the colleges to better things, and to-day the general trend is turning in the direction of medical training as a preparation for the specialty of oral surgery.

This paper is short. It has been my purpose to only touch the subject in order to introduce it and give time for a discussion.

IS IT NECESSARY OR EXPEDIENT TO EXTRACT THE DECIDUOUS TEETH EXCEPT WHEN A PERMANENT TOOTH IS ERUPTING IRREGULARLY?*

By J. S. BAGNALL, D.D.S., Charlottetown, P. E. Island.

The point to which I especially desire to direct your attention, and upon which to obtain, if possible, an expression of opinion, is embodied in the question, " Is it ever necessary or expedient to extract the deciduous teeth except when a permanent tooth is erupting irregularly?"

In the early months of my practice a case was presented to me of a child, about three years of age, having his superior molars decayed even with the gums. There was much inflammation about the remnants of the teeth, so much so that the boy was unable to masticate his food, or to sleep properly.

Under these circumstances, I considered action imperative, so had ether administered and removed all of the roots. The soreness soon disappeared and the little patient, relieved from his intense suffering, progressed favorably.

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*Read before the Maritime Dental Association, September, 1898.

Some two years later two dentists persuaded the parents of the child that the extracting of the teeth had destroyed the germs of the permanent teeth, and that consequently the boy would never have any. Later, at the time the teeth might reasonably be expected to appear, one of the aforesaid dentists declared that it would be necessary to cut into the gums freely quite often to enable the new teeth to force their way through, and when these appeared in due course, as I always maintained they would, he took the credit of their production. On the other hand I considered that if the teeth could penetrate through the bone, the gum would certainly give but little resistance. Every intelligent dentist whom I conversed with concerning the case agreed with me that the new teeth would certainly come in all right ; but I could find little written that had any bearing upon the subject, and so had nothing authoritative to show the anxious parents, who are exceedingly intelligent, and whose fears I desired to allay.

This case, which I have cited at length, tended to make me more observant of the process of shedding the deciduous and eruption of the permanent teeth, and, as a result of my experience, I have made it a matter of practice, when a child is brought to me with an aching deciduous tooth or teeth, if all means at my disposal fail to relieve the trouble, and the little one can neither take sufficient food without suffering, nor rest at night, to administer ether if necessary, and remove the offending tooth or teeth, the slight danger of such extraction interfering with the legitimate expansion of the arch being, in my opinion, a minor one. In the cases so dealt with my youngest patient was fourteen months old. The upper central and lateral incisors were badly decayed, the gums were swollen, and he seemed to be suffering very much. After the removal of the four teeth the little fellow developed normally, and at the usual time the permanent teeth came in as satisfactorily as if nothing unusual had happened. My second youngest patient was seventeen months old. I extracted his upper central incisors, and seven months later I removed the two laterals. This boy is now about four years of age. At this date I can only say that he was freed from suffering and is developing satisfactorily ; but I trust in due time to be able to report that his permanent teeth have appeared.

In every case of removal of the temporary teeth that has come to my notice, all of the permanent ones have erupted, and only in one case was there not space enough for the new tooth. It was a superior left second molar. The boy is now in his tenth year, and, if the crowding still continues, I will use force to overcome it. Here is a cast of the mouth. This was a tooth that I tried very hard to save, but after the death of the nerve and filling of the cavity a discharge of pus set up, the tooth became quite loose, and, on extracting it, I found the peculiar absorption so well described by Prof. Peirce, of the Pennsylvania Dental College.

Further, my observations of the absorption of the deciduous teeth leds me to the conclusion that whenever the permanent tooth in its progress fails to involve the foramen, no absorption takes place, and unless the temporary tooth is removed its eruption is retarded or takes place out of the true line of the arch.

Here is a cast of the mouth of a boy about fifteen years of age. The first permanent molar had been extracted and a second bicuspid erupted in the vacancy, leaving a firmly-rooted second deciduous molar between the two bicuspids. I have more than once extracted a second deciduous lower molar which had remained in the mouth much beyond the average time and found a second bicuspid crown pressing directly where the posterior root had been. No absorption whatever had taken place in the anterior root. I have with me a good specimen of such a tooth.

Twice I have found the lower bicuspid erupted almost horizontally and pressing against the tongue, with no absorption in the temporary teeth. How many times have we seen, when extracting a tooth to prevent an irregularity, or rather to let into place a tooth erupting out of its proper line in the arch, a thin tapering partially absorbed root, plainly showing where its successor had, as it were, slipped by, and only partial absorption had taken place.

This leads me to enquire, are there not times when it is judicious and even necessary to extract the deciduous teeth in order that the eruption of the permanent ones may not be retarded or diverted by non-absorption of the roots of the former?

Here is a cast showing the two left lateral incisors of the upper left side in the mouth of a boy fourteen years of age, the permanent tooth occluding so far back that it shuts inside the lower teeth; the permanent tooth on the right side, from which the deciduous tooth was missing, being regular. Had the deciduous tooth been extracted this irregularity could have been prevented.

It is worthy of note that this mouth had seven deciduous teeth all firmly rooted. There are many such cases of the cuspid teeth erupting either inside or outside the regular line, which, in my opinion, might always be prevented by the removal of the first or temporary cuspids. Cases are quite common where the cuspids are present outside of the line, and we find the four cuspids, especially in the upper jaw, necessitating the removal of the two inner or deciduous ones. I have here a cast of such a mouth, but perhaps it is so common as to be of little value.

Here is another cast of a mouth of a lady about forty years of age, with the upper left cuspids both deciduous and permanent with the lateral incisor missing, and on the right side there also appear to be two cuspids. The lady says that about ten years ago the second or further back one grew down, inside of a small tooth which she had extracted, and gradually fell into line.

The most marked case I have had is that of a young man about twenty-one years of age, who had two badly decayed upper deciduous cuspids; and, being convinced that teeth are sometimes detained from making their appearance by the non-absorption of their predecessors' roots, I removed the then incumbents and, ere long, both my patient and myself were delighted to find two worthy successors putting in an appearance. This was about three years ago.

Here is a cast of the mouth at the present time showing two perfect cuspids.

This cast represents a portion of the mouth of a person about thirty years of age. Two teeth had been extracted some six months ago, and a permanent cuspid is now erupting. Both bicuspids are missing; whether the two teeth recently extracted were the bicuspids or a bicuspid and deciduous cuspid, I am not able to state, as I have only recently seen the mouth.

A lad, sixteen years of age, was in my office in July, who has his upper cuspids and three molars still firmly rooted, only having lost one deciduous molar. In the lower jaw all of the deciduous teeth had been replaced by the permanent ones. While I anticipate that his permanent set will soon be completed, I am of opinion that it would hasten matters to extract the five deciduous teeth, but hesitate to do so lest such action should be deemed unjustifiable meddling. Had the mouth of my little patient, over which there was such a tempest, not erupted his upper bicuspids until past sixteen years of age, it certainly would have been very unfortunate for me.

In view of the facts which I have justed cited, and being convinced that many similar ones must have come under the notice of those whom I have now the honor of addressing, I would ask for a general expression of opinion upon the points thus raised.

PYORRHŒA ALVEOLARIS. PERSONAL EXPERIENCE IN TREATMENT.*

By W. GEO. BEERS, L.D.S., D.D.S., Montreal.

What we positively know about the pathology of pyorrhœa alveolaris might cover half a sheet of note paper. What we positively do not know would fill folios. Our investigations are like a deep dive into a dark sea, knowing nothing of the bottom, and uncertain of rescue; and while the regulation "twenty minutes" ought to suffice to tell all I know of my own experience in treatment, it it would take hours to relate explorations in the realms of pathological speculation, and the many discoveries made of one's own etiological ignorance. We make a step towards knowledge when we discover and confess our ignorance, and perhaps one's frankness in this direction may be a little inspired by the feeling that his friends are in the same plight. Somebody said that while caries is the most prevalent disease in existence, there are more teeth lost by pyorrhœa alveolaris; but we have no statistical proof that this is true, and I am disposed to accept it as one of those hasty and epigrammatic statements, which pass too current entirely because of their catching phraseology. We cannot assume that all teeth that are "lost" are lost legitimately. There are more illegitimate deaths than births. It is quite safe to suggest that thousands of teeth are "lost" by ignorance on the part of the patient or malpractice on the part of the dentist. It needs no extensive experience to assert, that the large proportion of "lost" teeth in the establishment of the quack dentist, are like lost souls that have none but themselves to blame for their damnation.

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* Read before the Maritime Dental Association, September, 1898.

We need no statistical proof to declare that the diseases which attack the soft and adjacent structures of the mouth, especially those intimately connected with the alveoli, are more difficult to treat, and more likely to recur, than those which attack the teeth themselves. The force of resistance (*vis medicatrix naturæ*) aid the soft structures; it is entirely absent in the hard, unless in the very exceptional and limited cases of arrested caries. Yet there is a limit to the tolerance which the soft structures exhibit, and when that limit is passed we observe irretrievable recession of gum, alveolar margins, entire destruction of the sockets and pericementum. There are a hundred questions which might be referred to, but however we may speculate on the etiology of this disease, I venture to express my belief, that if we can take care of the gingival line, where the enamel and cementum join, or, in brief, of the gum tissue at the immediate neck of the tooth, the rest of the gum will largely take eare of itself. In modern dental practice the abuses of the free margin of the gum are as daring as they are dangerous. It was not so in the olden time. The wisdom which only comes by experience, is entirely absent in the army of young enthusiasts who revel in rubber dam, ligatures, clamp wedges, and who rush into the operating arena with all the devices of the dental engine, with its rapidity of movement and the many abuses with which it is charged. Overhanging fillings, the nidus they make for debris pressing on the interproximate spaces; the numerous mechanical injuries inflicted on the gingival line by clasps, unfinished margins of vulcanite pressing on the interproximate spaces so as to make deep pockets and ultimate gum recession—these are very ordinary exciting factors in bringing about the first stage of pyorrhœa. The interdependence of the teeth and gums is imperative. The teeth will be retained in the socket, it may be for years, but it is never forever. The gums will tolerate an immense amount of mechanical and surgical abuse anywhere better than at the gingival line. Why is this? Because the soft glandular-like epithalium—though it is not a glandular structure—which lies at the neck of the tooth, is composed of more delicate cells than elsewhere in the gums; its fibres are more intimately connected with the cementum; the cementum is thinnest as it reaches the neck of the tooth, and the peridental membrane depends for its tense hold on the roots upon the integrity of the fibres of the pericementum which unite with the cementum at the neck.

I believe there are constitutional predisposing causes of pyorrhœa alveolaris, but in searching and speculating in that direction, it is wise to search carefully for causes closer to view. We see mouths not only after or during illness, but in good health, which are human cesspools. The origin of a good deal of pyorrhœa alveolaris is no more obscure than the origin of a good deal of typhoid. Many people will tolerate more positive filth, and more pyogenic bacteria in their mouths than they would on their feet.

The etiology of caries is no longer a speculation; that of pyorrhœa alveolaris is entirely so. We know that it is a perversion of normal physiological action; that it is a deviation from the normal standard of health of the parts concerned, constituting a distinct disease that may end in the death and loss of the teeth. But we are not agreed as to whether or not it is infectious, local, constitutional, or both. It is a much named disease, whether it be called Rigg's Pyorrhœa Alveolaris, Suppurative Inflammation, Phagedenic Pericementitis. Is it due to salivary or sanguinary calculus, or both, or fungi, or bacteria? Is it wholly or in part due to traumatic inflammation? Is it a local expression of a systemic condition, and located in the mouth because of a predisposition of the gums, the pericementum and the alveoli? Is it a primary or a secondary lesion? Is it never present, excepting in a depraved state of the nervous system? Is it associated with gout, rheumatism, Bright's disease, locomotor ataxia, uterine troubles, and other coustitutional complications; the excessive use of salt, or alcohol, which causes increased secretion of uric acid? Is the calculus uric acid? Is it connected with catarrh of the mucous membrane of the nose or pharynx, rachitis, tuberculosis, scorbutis, scrofula, chronic constipation, exanthematous diseases, malaria, diabetes, tabes dorsalis, dyspepsia, syphilis, anæmia, chlorosis, repeated pregnancy, bad air, bad food, hygienic neglect? Or will some Boston prophet arise, who will tell us that it and all other oral troubles are due to the presence of amalgam, as in the middle ages, earthquakes, tempests and epidemics were ascribed to the devil or the Jews. With all this bewilderment in etiology, how can our treatment be based upon anything better than empiricism? If the etiology is obscure, how can treatment be scientific? We must just console ourselves by feeling our way in the dark, and taking the consequences until some one lets in the light. Something must be done for our patients. The true cause of many a disease is obscure, but physicians do not despair and let the patients die if they can help it. Neither are we to abandon to the forceps, if we can help it, conditions we cannot explain. Not even because we are sure of this much, that extraction always cures. So does the guillotine forever cure migraine.

Before leaving this part of the subject, I would like to ask you to obtain Dr. W. C. Barrett's "Oral Pathology and Practice," just issued, in which the question is carefully considered.

It is a well-known fact that there are general diseases successfully treated, the causes of which are as unknown as that of pyorrhœa. It is nothing to boast about that this has and can be done; it upsets our theories and teaching in the recognition of disease and its proper treatment.

I like Dr. Barrett's division of the disease into three conditions: the first entirely local, due to local irritation; the second distinguished by the nodular deposits on the root, and the formation of pockets; the third, due to, or coincident with, a depraved constitutional condition. The first is an advanced condition, of simple gingivitis; slight periostitis confined to the gingival margin, and the edge of the alveolus, demanding gentle brushing, massage with the finger. As a regular mouth wash for this condition I prefer tincture of pyrethrum. The pyrethrum root may be left in the best alcohol for a week. It is, I think, the best astringent we possess. It is well to remember that there is a time in this disease when it may be easily arrested, and that there is a time when it is too late. It is well to remember also, that by over-treatment we may actually produce to order acute inflammation from the simple irritation. So far as instrumental treatment is concerned, if there is no salivary calculus, a good deal of wholesome neglect is advisable. There is nothing the matter, in this stage, with either the root or the alveoli.

I might repeat everything that has been suggested in the way of treatment where the disease has all the pathognomonic characteristics; but, to be as brief as possible, let me suggest a few aphorisms. Keep the mouth and your hands and whatever you use perfectly aseptic. Whatever drugs you use be sure they are pure. You must needs work a good deal in the dark, but get all the light possible, both in diagnosis and in operating. A drug that is useful may be abused by over-use so as to become a positive irritant. Iodine and aconite in the incipient stage of inflammation will retard the circulation and stimulate lymphatic action, but used to excess, as it commonly is, it is a destructive poison. Alkalies in any form should not be used, either by the patient or the operator, because they precipitate the salts of common tartars. In secondary treatment, and, in fact, all through, be careful not to disturb granulations which you have been trying to produce. Do not operate oftener, as a risk, than three days of each week ; some rest is as necessary as some operating.

Before beginning the removal of serumal calculus, be as sure as possible just where it lies. There may not be any. I have seen acid conditions, in pregnancy, etc., when salivary calculus for the time is dissolved and disappears. As to whether or not this occurs where the calculus is serumal, I do not know. Massage the gum with the finger to make it bleed, if it will ; sometimes lance ; sometimes use a leech. Relieve venous congestion as much as possible before scaling. There is an object in manipulating the gum margins so as not to wound them any more than they are already wounded. I begin my diagnosis for the nodules of calculus by explorers I have made for the purpose, using a diagram of the roots to mark the parts upon which it is deposited. My pocket-hoes and scrapers I have had made so as to adapt them as nearly as possible to the contour of the roots. Square hoes and scrapers are not the best. I have had these made in duplicate of platinum-iridium so as to use them when the sulphuric acid is injected into the pockets. Some authorities object to the use of chemical agents to dissolve the deposits, and favor trichloracetic acid to soften them. I venture to believe what is considered an objection, viz., that they may cause a slight dissolution of the surrounding bone, to be advantageous, within proper limitations. Pure sulphuric acid is less destructive than dilute. Dip a wooden point in pure concentrated sulphuric acid ; fill the pockets. You can see the advantage here of having the concave platinum-iridium instrument. Aromatic sulphuric acid dissolves dead, not live bone, but I belive we overlook the condition of the contiguous alveolar wall, which I always scrape more or less. The dental engine, to my mind, is risky, unless to curette the alevolar border where it is necrosed. If it is necrosed, the surgeon's maxim should be remembered—" cut beyond the dead line." I have had some opportunities to examine the alveolus and teeth *post mortem*, and hope to report later. If anyone else has had a like opportunity, I hope they will report before I do. I think the condition of the porous alveolar wall in pyorrhœa alveolaris has been somewhat overlooked. The nodules on the root may be removed, but their effect on the pericementum alveolus is serious.

For many years the use of sulphate of copper, packed into the pockets twice a week, and allowed to remain for ten minutes each time, has been in favor in England. I swear by it. It contracts spongy gums and makes scaling easier. Its action involves less loss of tissue, while its curative powers are very marked. It does not blacken the teeth like nitrate of silver, or act on them like acids ; it does not spread over more surface than desired, like chloride of zinc, caustic, potash, and other such remedies. It causes little pain. Other caustics check granulation. Use bicarbonate of soda as a rinse, and pack it on top of the sulphate before rinsing. Protect the lips with an old napkin.

I have purposely avoided saying a great deal that might, and perhaps ought to be said, about peroxide of hydrogen, etc., and as I wish to leave room for somebody else to say something, I will say no more.

TABLE OF FILLINGS.

By F. B. Noyes, D.D.S., Chicago.

From a study of the table on the following page it is evident that the alloys manufactured and sold by the dental manufacturing houses are not what they ought to be or what they can be made. Thus far attention has been given simply to the composition of the alloy, and that, too, with especial reference to the properties of color and easy manipulation, regardless of shrinkage and expansion, except as measured by very crude tests. The effect of annealing has not been understood at all, and for that reason it is difficult to find two samples of the same alloy from different offices that will give the same shrinkage-expansion action. This has led to much of the confusion in the matter of amalgams. It is necessary not only that the composition of the ingot be correct and always the same, but that the filings be properly and understandingly treated after cutting, and that every lot be tested before it is put on the market.

The work of Dr. Black proves beyond question that amalgams can be made that will not shrink, and that a large number of formulæ are possible, giving somewhat different working properties, but the formulæ must be confined within a narrow range ; and when the filings are cut the work of manufacture is not over : they must be understandingly and properly tempered and tested before they are sold. This will never be done until it is demanded by the profession.

INSERTED BY THE MEMBERS OF TORONTO DENTAL SOCIETY FOR DR. BLACK'S CLINIC BEFORE THE ONTARIO DENTAL SOCIETY.

No.	Made by Doctor	Name of Alloy.	Tube.	Movement in Points.	Microscope.	Remarks.
1	G. V. Black	Fellowship	Z.	Cn. 1½	Very slight crack	This was an experimental sample annealed a long time.
2	F. B. Noyes	Frost white (Dr. Kester)	L.	Ex. 1¼; Cn. ½	Perfect	
3	J. B. Willmott	Silver 61½; tin 32½; copper 5	A E.	Ex. ½	"	2 weeks old, not annealed, coarse cut.
4	" "	" " "	B	Cn. 9¾	Wide crack	Annealed, fine cut.
5	" "	Robertson's	C F	Ex. 2½; Cn. 1½	Perfect	No excess of mercury in packing.
6	" "	"	C M	Cn. 1; Ex. 2½; Cn. 1	Slight crack	Bottom packed dry, top moist.
7	H. Clark	James'	D	Cn. 4¾; Ex. 5¼	Wide crack	Packed with square smooth end, soft.
8	" "	"	N	Cn. 11	" "	" " rotary motion, dry.
9	" "	Phillips'	C O	Cn. 2	Very slight crack	" rather dry.
10	G. A. Swann	Dawson	Q	Cn. 3½; Ex. 1½	Distinct crack	Mortar, medium, dry, rotary.
11	" "	Eureka	R	Cn. 4½	" "	8 months old, in hand, dry, rotary motion.
12	C. E. Pearsons	Alba	O.	Cn. 5	" "	2 " " mortar and hand, very dry, rubbed in.
13	" "	"	X	Cn. 3½; Ex. 3	Very slight crack	2 " " " " soft at bottom, hard at top.
14	Capon	Splendid	G	Cn. 5	Wide crack	2 " " soft pieces.
15	"	Half Splendid, half James'	M	Cn. 4½; Ex. ½; Cn. ½	Margin not good	Instrument heated, surplus carried off by gold.
16	R. J. Read	Globe	A J	Cn. 5½ and lost	Wide crack	Cut June 24th, 1896, became loose in tube.
17	" "	Same ingot	C E	Cn. ½; Ex. ½	Slight crack half-way around	Same ingot, fresh cut, not annealed.
18	" "	" "	S	Cn. 9	Wide crack all around	" " " " and annealed.
19	A. J McDonagh	Eureka	A K	Cn. 8; Ex. ½	" " " "	Mortar and hand, rotary, slight excess.
20	" "	Dawson's White	A G	Cn. 5½	" " " "	" packed vertically, no excess.
21	" "	Eureka	C G	Cn. 3	" " " "	" " " "
22	C. H. Waldron	James'	A H	Cn. 5; Ex. 1¾	Slight crack	Fresh, not annealed.
23	" "	"	T	Cn. 1½; Ex. 2½	" "	Same as above, surplus removed with dry filings.
24	" "	"	F	Cn. 2½; Ex. 1½	" "	" " " washed in alcohol.
25	" "	Recovered from scraps	A A	Cn. 6	Wide "	" " in F.
26	J. F. Adams	James'	I	Cn. 2½; Ex. 3½	Margins broken	Mixed in hand, dry.
27	" "	"	W	Cn. 2½; Ex. 5	Very slight crack	Three weeks old, very wet.*
28	F. D. Price	Price's	P	Ex. 1½	Above all around	Six months old, not annealed.*
29	F. B Noyes	"	C	Ex. 1	Very good	Re-annealed twenty minutes in boiling water.
30	A. E. Peaker	Sterling Refined	A Z	Ex. 6¾	Margins broken	Packed dry, rubbed in.
31	W. C. Trotter	Alba (3 weeks old)	K	Cn. 4	Distinct crack	Mortar and hand, packed moist.
32	H. E. Eaton	Michigan White (1 month)	A F	Cn. 2; Ex. ½	Very slight crack	" " " surplus rubbed off.
33	G. S. Martin	Dawson's White	E	Cn. 2; Ex. 3	Slight crack	" dry as possible, surplus removed with dry filings.
34	F. J. Ross	Splendid (3 months)	A B	Cn. 7	Distinct crack	" and hand.
35	" "	" "	T	Cn. 6½	" "	Old hard pieces mixed with it. Pieces size of small wheat grain; surplus rubbed off with chamois.

* This formula must be incorrect.

NOTE—Cn., Contraction; Ex., Expansion; Point, one ten-thousandth of an inch.

Proceedings of Dental Societies.

THE NEW BRUNSWICK AND NOVA SCOTIA DENTAL SOCIETIES.

HELD AT DIGBY, N.S., SEPTEMBER 1st AND 2nd, A.D. 1898.

THURSDAY, September 1.

Meeting called to order at 9.30 a.m., by Dr. G. K. Thomson, President of the Nova Scotia Dental Society.

Moved and seconded that Dr. McAvenny, of St. John, be appointed chairman of this meeting. Carried.

Dr. A. W. Cogswell was nominated by Dr. J. M. Magee as President of the Association, seconded by Dr. F. A. Godsoe. Carried.

Dr. H. C. Wetmore was nominated and elected to be Secretary-Treasurer of the meeting.

Dr. Woodbury mentioned the fact that the officers elected are merely elected for the present meeting, and Dr. Cogswell replied that that was the understanding.

Dr. MURRAY, of Moncton, N.B., moved that we have a Maritime Association to meet alternately in the three provinces, to be held every two years.

Dr. COGSWELL remarked that this matter was discussed at yesterday's meeting, and it was thought not advisable to elect officers permanently, and therefore they propose not to do that at the present time.

Dr. G. K. THOMSON moved as follows:

Whereas, the members of the Dental Association of the Maritime Provinces deem it desirable to meet annually for the purpose of holding clinics, reading and discussing papers and scientific subjects relating to dentistry, and feel that they can work to much better advantage for those purposes as one body than separately, it is therefore

Resolved,—That the members of the Nova Scotia, New Brunswick and Prince Edward Island Dental Associations do hereby organize themselves into a body to be known as the Maritime Dental Association, which shall be separate and distinct from the above mentioned Associations and solely for the purpose of the social and intellectual development of the profession of dentistry in the Dominion of Canada.

Dr. MURRAY withdrew his motion, and seconded the motion of Dr. Thomson.

Dr. GODSOE suggests that a report of the sentiment of the different societies on this subject should be given as to their wishes to form a Maritime Association. On behalf of the New Brunswick Society, at the request of the Secretary, he stated that the New Brunswick Society deemed it advisable that a Maritime Association be formed between New Brunswick and Nova Scotia, and, if at all possible, to get Prince Edward Island to get it to do so. That said Association meet every two years.

Dr. COGSWELL asked to have the Secretary of the Nova Scotia Dental Society give the views of that Society on the subject. In place of the Secretary, Dr. Woodbury replied as follows: The resolution passed by the Nova Scotia Dental Society yesterday was to the effect that we are in favor of the idea of joint meetings of the Maritime Dental Associations; we deem it desirable that a meeting should be held in 1900 in New Brunswick, that we considered it was not advisable to organize at this meeting because it would give plenty of time to see the effect and the working of our union meeting next year at our provincial meeting, and to see if it would act injuriously to our own provincial interests. If it is going to kill our Provincial Association and make that represented only by a few it would be a great pity.

Dr. MAGEE suggested asking each man present if he would be willing to join an association for this purpose.

Dr. GODSOE explained the idea of the Nova Scotia Dental Society was to hold another joint meeting before such an association was formed.

Dr. WOODBURY moved as an amendment to the resolution of Dr. Thomson, That this meeting recommend that the organization of the Maritime Dental Association be postponed until 1900; that a joint convention be held in New Brunswick at that date; that these joint meetings be known as the Maritime Convention of Dental Surgeons.

Seconded by Dr. MCAVENNY. Carried.

Dr. COGSWELL introduced to the meeting Dr. Melotte, of Ithaca, N.Y.

DR. MELOTTE'S ADDRESS.

In the language of Emerson I may say, "I better know than all how little I have gained, how vast the unattained." I feel as if the tide almost had gone out and I am like a little barque stranded in this great beauty of scenery about me.

This subject of supplying the partial loss of teeth, as perhaps I will concentrate upon that more than anything else, is a deep subject, there are so many different ways, ideas of reaching different points, that perhaps, after all, I can give you only a hint now and then, only the result of discoveries I have made. I have been battling with this subject of dentistry for forty-one years, and to become at all known more than ordinary is to load a man with great responsibility. I have tried to make preparation for such meetings as yours and have prepared this model which is carved with wood, a half section of the lower jaw, and a bridge has been made to supply the loss of several teeth from first bicuspid to second molar. I may say the first bicuspid and second molar have been used for anchorages. The molar has been trimmed down. I have a tooth that represents the normal condition of this tooth, and you see it is leaning forward. The difficulties that are met with are, straightening the leaning tooth and dressing it down upon the sides so as to make it possible to form a band to enclose the tooth and make a proper anchorage. Anchorages are very important in bridge work, and if they are carelessly prepared and greater strain comes upon the abutments or anchorages than they will stand, the teeth are often weakened and destroyed. I don't know that I can do more than talk about this, and at another sitting with you I may endeavor to show you in clinic some of the methods I bring into use. A long bridge on one side where the opposite side has no opposing forces often results in the destruction of the bridge through too great stress, and will sometimes cause bridge work to be discarded by those who have attempted too much.

I do not stand before you as having always succeeded in bridge work. I have had very many failures, and yet those very failures have been stepping-stones to attaining a higher standard in the work.

Supplying teeth by gold removable plates or bridges is often better than permanent bridges. In speaking of these cases I will try to describe to you my method of treating a tooth which has no occluding tooth above. We will say the occlusion goes forward of this molar. In such a case it would not be necessary to grind away the cusps of the tooth, and it would be very easy to make a cap of gold for the tooth. Suppose my cuff is the band I am to form. My manner of forming a band is to wrap a piece of gold about the tooth. I am not in the habit of taking measurements, but by the eye I judge the length which I must cut my gold to form the band, and pressing it over the tooth to close it up and model it. Then, allowing it to lap, I join the piece of gold at this point (illustrating the upper edge), leaving the balance open so that it is less rigid in after work of fitting. Instead of soldering I weld the gold at this point by using borax either rubbed on a slate and applied with a brush or enough taken on tweezers to coat the surface. Then with a blow-pipe bring up almost to melting heat the portion that laps, thus fusing the surfaces so that they unite.

This method of welding gold I got from Dr. Bing, of Paris, some eight years ago when I was there. At first I considered it more of a novelty than of practical benefit, but in the welding of bands in the past five or six years I have not used any other method. I have not used solder because solder is very apt to leave the part at the joint more rigid and stiff. Having welded I press it down until it whitens the gum, taking it off and trimming where necessary from time to time until at last, having fitted it to the gum, I complete the welding.

We will say the fitting has been perfect around the margin of the gums and the part extending above the cusps is now to be taken into consideration. Fill the inside of the band resting above the summit of the cusps with plaster with a small spatula such as is used in mixing fillings, being careful to exclude air. This will ensure a perfect impression of the cusps and inside of the band. After the plaster is set remove the plaster and band, hold it over a lamp in tweezers and dry it slightly to get rid of excessive moisture, and pour in a small quantity of low fusing metal, fusing at 212, metal that you begin to know as Melotte's fusible metal. When the metal is thoroughly congealed I then remove the plaster which reveals the cusps cast in this fusible metal. You are looking down upon the cusps in this cap. Now with the shears trim the part of your band extending above the height of the tooth down to the level of the summit of the fusible metal cusps, on the little cast, upon the inside. Then with a file or corundum wheel bevel or grind the surfaces to a thin edge. Then with a burnisher or hammer, being careful not to mar the fusible metal, it is contoured. Having contoured and brought the edges of the fusible metal down to a level with the outer edges a little wax may be used to more perfectly contour and make smooth and uniform the edge that extends over on to the fusible metal. You will see this model here represents the cusps with the band extending around and bevelled over. Now take an impression in the moldine of the surface extending just above the line of the cusps, and having melted the metal after putting on the little rubber ring over the moldine in the cup pour in fusible metal as cold as it will run well. Have it cooled down almost to the congealing point and fill the ring with the fusible metal, making quite a thick cast—perhaps in thickness half as great as that of the width of the little rubber band.

It is very important in manipulating this metal you should not pour it too hot if you wish to get a perfect cast. After your metal has congealed and is cold enough to handle take the ring and metal off and then take the rubber ring off with the metal and pour cold water on it until it is perfectly cold if you want to make a counter-die. Having this metal perfectly cold and wet, you all know it would not do to pour zinc or lead on to zinc that was wet, and as it melts at 212 it is below the point of steam heat, therefore you can pour this molten metal on to the cold metal without generating steam. Now it would almost seem as if this could not be done without the adhesion of the two casts, and it is only by having the metal perfectly cold and wet that it can be accomplished. Now stir the metal (I use a ladle of cast iron, perhaps not as thick as a plumber's ladle, but thick enough to retain the heat sufficiently to keep it liquid so that you can stir until it is almost granular) until it begins to thicken up, and that is the point where it should be poured, if you want to produce a cast without having the two adhere or fuse together. If you are very careful, you will produce a die and counter-die from the same model without any difficulty. Still, if you stick the first one, and have been careful in removing the die from the moldine, you can cast a number without any trouble. If the cast sticks, the die and counter-die stick together, you can make another without taking a second impression, or it is very easy to smooth off the moldine and take another impression if you should make a miss.

To obviate the necessity of making a counter-die, about two or three years ago something came to me which I think is a great saving of time. Soft pine cut into little blocks are very convenient for use instead of a counter-die held endwise of the wood over the metal, first laying the piece of the gold over the face of the die. One blow of a good heavy hammer, perhaps three times the weight of an ordinary claw hammer, on this wood will serve as a counter-die. You can get perfect swaging with the wood, as perfect, I think, as a counter-die, and you save fusible metal adhering to the gold. If any fusible metal adheres to the gold you must be very careful to remove it with pumice-stone or in some other way. If you do not, in heating, it will unite with the gold and destroy its usefulness because it is composed of tin, lead and bismuth, and great care must be used. The wood shortens the process one half. Having swaged the gold for the cap, the next thing to do is to try it on to the gold band which holds the fusible metal cusps to see that it fits perfectly, putting it on where it belongs, then mark it. Now take the gold band containing the fusible metal, put it into a big tablespoon and boil the fusible metal out. It will melt in boiling water sufficiently to permit you to scrape out every particle. If you have put the cap you have swaged on you will find it fits. Now put it into the soldering pliers and tack it or unite it at some one point. After that, if you feel it is necessary, fill it with investment material and complete the soldering. In my own office, with skilful manipulating of the blow-pipe, I can complete the soldering by laying it without investing it in one of the corrugations of the pad (using the mouth blow-pipe). Cut away with wheels and files and corundum wheels until you have sufficiently smoothed it, put it on to the tooth, and if you have proceeded rightly and according to this description, which is more or less imperfect, it ought to fit perfectly under the free margin of the gum as it did before you found the cap. To know how to do a thing it is necessary to see it done. This gold, we will say, is No. 29. I do not think it advisable to use anything less than 29 gauge.

I have shown you how to make a cap, and out of the mouth to a certain extent. To take impressions and make a band from an impression is something I do not practise, yet there are some who undertake to make bridge work entirely by casts. I know models are sent to men who make bridge work, and the finished work is delivered to the operator ready for setting. I have heard of successes in that way, but can only wonder that success can be attained. I wonder men do as well in the absence of patients as they do. I know in making partial and full sets it is done and those who do the work exhibit great skill. The results are sometimes wonderful, but I do not recommend the making of bridge work upon casts alone. If caps were formed and impressions taken I might finish the work from that stage.

Having described this method of making that one kind of abutment, which is, I will admit, one of the easy things, we will take another feature of the case and see what we would do providing there was a slight occlusion. I have presented a difficulty here for the sake of more accurate description. Suppose the upper tooth occludes like that (shows model). Before proceeding to make the cap, as I have told you, grind down these cusps equal to the thickness you want to supply, in order to give sufficient grinding surface. Grind that away with a corundum wheel equal to the thickness you want to add. I believe in having sufficient thickness, even more than might be thought sometimes necessary, because there is enormous pressure sometimes used upon bridge work, and the caps are very easily ground through in the act of masticating. Proceed with fitting your band around the tooth, then filling it with plaster in the same way as explained before, and have your patient bite into it. When your cast is made you can calculate the amount of thickness you may put on by putting it in the articulator. To get perfect articulation is saying a good deal. I have a way of articulating teeth that to me gives me perfect results, so as it is not perhaps the ordinary way of proceeding, it might be as well for me to pass on to the manner of taking a bite.

In parenthesis I will say here I once heard Dr. Barrett, of Buffalo, say at a meeting given to a section of dentistry at Berlin before the International Medical Congress, that there was no

American art in the dentistry, no English art, no German art, but it was dentistry, and each and all had contributed to make the dental profession what it is. Dr. Evans was there, and while he did not reply to him he afterwards was very wrathy to think that Dr. Barrett did not acknowledge there was American art in dentistry, distinct from all other dental art, as there might be an art in painting, an Italian art, a German art, a French art and all that. I do not know but what Dr. Barrett was nearly right ; each people have contributed to make dentistry what it is. (Showing model.) A great many Americans could produce stronger teeth than many other teeth that are used—but this is a digression.

This moldine I shall make use of in trying to give you an illustration of taking a bite. We will imagine the cap has been made, the anchorages have been formed. The anchorage for this molar and for this bicuspid have been formed, and we are about to consider the matter of taking an impression which I always take in plaster. You know if this molar leaned forward to any great extent there would be a dovetailed space, and when you come to take plaster out it might break and compel you to make another attempt in order to get a cast which would be sufficiently accurate for you to build a bridge between these two abutments. Fill in with quick setting plaster between these two points, and I will use this moldine now instead of plaster. I fill in between these two points, making the core here to prevent breaking in removing the impression. Direct the patient to bite up, to close the mouth. In closing the mouth we shall get an imprint of the upper teeth in the plaster, the mouth remaining closed until the plaster sets. When it is quite hard direct the mouth to be opened, and then with a knife or spatula remove the ragged edges of the plaster. It may be taken out, trimmed and put back. I do that very often, but you can trim it away in the mouth, leaving the imprint of the upper teeth in the plaster.

Now give it a coat of liquid vaseline, or you may soak it, using castile soap, or varnish it. Fill your impression tray with quick setting plaster and take an impression over the whole, over the core which is now in place containing the imprint of the upper teeth. Take an imprint just as you would have taken the impression if you had not filled in this core. Now remove the impression and with it the core may come out. If not, remove it and put it in its place. If the caps come out all the better, if not take them off and put them in proper places. We are looking down into the impression and we see the ridge, about as you look upon this illustration, and we look down into the caps. This represents very nicely the core. The imprint of the teeth is out of sight, imbedded in the impression. Putting a tack or pin into the caps so as to prevent them from breaking away when the cast is removed from the impression you are now ready to consider another very important point.

We see we have an impression of the anterior teeth, which is quite necessary. It is not necessary to have the teeth so perfect on the opposite side of the mouth, but if you can get them so much the better, that is, the crown surface of the teeth on the opposite side of the mouth. Before pouring plaster into the imprint of the anterior teeth I use fusible metal, which is a departure from the usual method. But before this I put an ordinary pin into the cuspid and into the central, cutting off about one-half the pin, leaving the pin projecting, further on you will see the utility of it. With a small quantity of fusible metal pour in and fill the teeth up to the gum line, stopping there; and as soon as the metal congeals and is fairly cold varnish the other portions of the cast and proceed to fill in with investment material; after that is perfectly hard you remove your cup carefully and then begin to cut away, and you will see as you cut away your impression, you come down to fusible metal tips or cutting edges of the teeth and the great object of which is to save defacing the teeth. If they were plaster it would take you a long time to cut away and remove the shell impression from the teeth, but you can be quite careless in cutting down because your knife will come in contact with fusible metal and it is very easy to remove the plaster from it. Cutting the impression away you come down to the imprint of the upper teeth in the plaster core as it was before you took the impression; there it is on the plaster model. The caps are in place and all the anterior teeth are here represented by fusible metal down to the gum line; below that it is your ordinary investing material. If you had taken wax and got a wax bite and laid it aside you could not put it on the plaster cast as perfectly as this because the case is now part of the model.

The next thing is to get an imprint of the crown surface of the upper teeth. Take an impression tray and fill with quick setting plaster and take simply the crown surface and cutting edges of the anterior teeth. Do not undertake to get a full impression, simply the crown surface of the teeth for an articulating model of the upper teeth in plaster. Having obtained that, dry the cast slightly to remove the excessive moisture by means of a blow-pipe or holding over a Bunsen burner. Have fusible metal melted and pour into the impression of the upper teeth. Pour the metal quite cold and in two minutes it will be congealed and hard so that you can put it under the faucet and remove at once. You could not get a cast from a wax impression of the upper teeth as quickly as you can that. Having obtained a perfect cast of the upper teeth in fusible metal, place the metal upon the cast, the upper teeth, the molars and bicuspids into the imprints made by the natural teeth on this core. If the bite was perfect, the occlusion was perfect, and this cast must be perfect, it could not be out of the way the two-thousandth part of an inch. It must be perfect if you proceeded perfectly as in running the scale. Place the occluding casts in position so you can put them into the articulator and get a perfect occlusion of the teeth for the supply or dummies. That is to me one of the very very important things in extensive bridge work, because to have now and then a point of contact instead of perfect occlusion of the teeth will cause destruction to the bridge, I don't care how well it is made. I have bridge work in my own mouth, one piece of which has been in eight years, and another I have had for about twelve or thirteen years, which has done good service. I have seen pieces of bridge work taken out of the mouth exhibited as failures, and it was not fair to the system or to the men who made them to say they were failures. People learn to eat after a little with bridge work, and they forget the teeth are artificial. The crushing force produced in masticating food is something terrible. We do not realize how much strain these teeth are put to in masticating.

I only wish that each one of you who is hungry for knowledge about bridge work could be in my own office and follow me there where we are practising my system ever since I discovered this method of running teeth with fusible metal in making models. I will attempt to describe a case where teeth are missing from the upper jaw. We will say a cuspid and a lateral are to be supplied. We cap this bicuspid for anchorage and make an open-faced band for a central which is a difficult tooth to make a band for on account of its shape. It is very much easier to make a cuspid openface. We will say there is nothing but a root and a cap is put upon the end of the root. There are so many things to be thought of and spoken of in relation to the banding and capping of roots and putting in the retaining pins, enlarging and making the anchor pin, that I hardly know where to begin and where to stop. Having formed these anchorages any way you please, if I used porcelain I should make an anchorage crown and place it in position before taking an impression for supply between the two points ; I should fill in with plaster between those points the same as before. If there were any natural teeth to be represented on the model those would be poured with fusible metal, then in cutting away the impression I would come down to the fusible metal teeth and there would be no danger of defacing. It is a good plan to represent in fusible metal all the teeth that would ordinarily be represented in plaster. Have all the teeth that are to be anyway used in locating the supply teeth, or for occluding purposes, represented in fusible metal. I think if you try this you will find it a great advantage.

I might say something about the preparation of the root for a band preparatory to making what is ordinarily termed a Richmond crown. It is very necessary that the root be trimmed in such a way as to admit of having the band go well up under the free margin of the gum and fit the root accurately, and it is necessary to have the end of the root ground, giving it the proper slope, so that in putting your porcelain crown on you can locate it with reference to the antagonizing teeth.

The preparation of the root is very important. You must take that into account and must not let it escape, because imperfectly fitting bands are lacking in firmness. Where they are too thin is one of the great causes of single teeth coming away, and it is very important where we use a root in bridging to have bands made of gold sufficiently thick and a perfect fit. I had a piece of bridge work in my office made by Dr. Charles P. Grant, who made a very extensive piece of bridge work and attempted something that I hope has not been attempted very often since, that of making a full upper bridge permanent on two cuspid roots, saddling the ridge in the molar region. The doctor claimed the discovery of the matter of making saddles, and I guess he was one of the discoverers and possibly might have been the first. I have wished sometimes no one had ever discovered the matter of making a saddle to supply teeth on the back with any number of the anterior teeth as anchorages because I think they are weak, the pressure of the saddle on the gum is very great, and no matter how strong you make the attachment of the saddle to the anterior anchorage, it is very likely to give way. I do not believe in saddles.

After the teeth were treated the roots were cut off and the anchorages made like this (illustrates) with pins going up into the cuspid teeth. They were well made, and the only weak point and the cause of destruction of the piece at the end of three years—I wonder it did not give out sooner—was that he made the caps flat.

I think it very important the root should be hollowed out and the cap burnished down in after having been soldered on to the band. Hollowed in that way gives additional strength or hold to the pin. Filling this up with solder makes the cap stronger for anchorage.

In backing up a porcelain shell, especially in bridging over the anterior spaces, making dummies, or supplying the lines of centrals or laterals in bridge work, it is quite important that the edges of the porcelain should be well protected with gold. In reducing the length of porcelain I hold the tooth after it has been backed up—this representing the backing—I hold it to the corundum wheel, bevelling the gold with the tooth, and then wax on a piece of hard metal (gold and platinum), just about in this shape (illustrating), letting it extend below the cutting edge of the porcelain, and then fill in here with solder. I should recommend the piece to be about twenty-three or twenty-four gauge, and when a tooth is invested let the investment come over the edge to hold it firmly and then fill in here with solder. You can do that after it is waxed on to the cap.

You can take twenty carat gold with three or six per cent. platinum. The metal ordinarily used for clasps will do very well, producing hardness of the gold by admixture of a small percentage of platinum, and then by filing and grinding this away, leaving it extending a little below, you will have a hard cutting edge to save the porcelain from fracture. I think that is quite important in bridge work, and in fact wherever the occlusion comes very greatly upon the front tooth.

There is another point I may state here. Where centrals and laterals are to be supplied and the back teeth are lacking to any great extent, destruction will come to such a piece of bridge work, unless the teeth are shouldered at this point. By filling in with solder here and building out a shoulder, the lower teeth will catch here on this shoulder, so in biting it will have a tendency to throw the teeth in, instead of striking on a bevel and throwing the teeth out.

Of course the incisors, in cutting, strike the cutting edge ; but as they come up they strike this shoulder and that overcomes the resistance. You have really converted the anterior teeth supplied into bicuspids. That is quite important. There are very many pieces of bridge work made to supply the lines of the anterior teeth between the bicuspids. These pieces answer, as a rule, for a time very nicely ; but unless the posterior occluding teeth are in good condition, these pieces are very quickly destroyed by the undue force put upon them.

Q.—Any piece of metal put in front, would not that have a tendency to crack the facing?

A.—No, I don't find that. Porcelains crack by undue use of borax. I have every piece of gold I use smeared with borax. I paint it on with a camel's hair brush where I want to have the solder flow, for I don't sprinkle it on, because borax unites with the body of the tooth and the enamel and will weaken the tooth. The breaking of porcelains comes, I think, more from not properly heating pieces before submitting to the melting flame. A piece should be heated until it is brown and then quickly transferred to the pad and under a blow-pipe, the heat applied at that part farthest from the porcelain first, gradually working up to the point where the porcelains are lying under gold. With proper investments covering porcelains, and proper heating and proper cooling, you should have no broken teeth. If every time you solder you could heat up a little sand and put your case in it, covering over with hot sand and letting it cool down slowly, it would be a great deal better than to put the piece on the bench and let air come to it quickly, as some allow. In making porcelain teeth it is necessary to raise the heat gradually, and very necessary to allow the heat to come down slowly before removing from the muffle, and of course the rule applies to continuous gum work. If we were always as careful in manipulating heat as manufacturers are in making continuous gum work, or making teeth, I think we would have less trouble with broken porcelains. One great cause is that in locating the teeth we allow the edges to come together. In old plate work it was thought a good plan to put a thin piece of isinglass or paper between the teeth, so that when the paper burns out the teeth are left slightly apart, so that the force of contraction of the metal would not be exerted to the breaking of the teeth.

(To be continued.)

NOVA SCOTIA DENTAL SOCIETY.

Officers elected: President, Dr. Frank Woodbury, Halifax; 1st Vice-President, Dr. M. K. Langille, Truro; 2nd Vice-President, Dr. L. St. C. Saunders, Kentville; Secretary, Dr. F. W. Ryan, Windsor; Treasurer, Dr. H. H. Bigelow, Halifax. Auditors: Drs. A. W. Cogswell and G. H. Fluch. Executive Committee, Drs. C. O. H. Webster, L. St. C. Saunders, J. A. Johnson, with President and Secretary.

Next annual meeting to be held in Halifax, N.S.

Dental Board officers: President, Dr. A. C. Cogswell, Halifax; Secretary-Register, Dr. Geo. K. Thomson; Treasurer, Dr. H. H. Bigelow.

NEW BRUNSWICK DENTAL SOCIETY.

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NOTES ON THE UNION MEETING.

To Dr. Geo. K. Thomson, of Halifax, is due the largest share of credit for providing material for so successful a meeting, though no small share is due those who prepared and presented papers.

Dr. Cogswell's paper, though delivered once before, was well worthy of representation, and must have entailed a large amount of labor and care.

Dr. Woodbury's paper certainly touched a vital spot in the development and progress of our profession, for without a comprehensive educational foundation, we cannot expect the coming generation of dental practitioners to place our profession in the position it should occupy, namely, on an equal footing with the medical, or in fact any profession.

Dr. Wetmore submitted a paper well thought out and well delivered. It suggested a train of thought which must in the near future bring forth good fruit.

Dr. Murray's paper being more practical than theoretical, was the more acceptable to the ordinary everyday practitioner on that account.

Dr. Bagnall's paper was highly appreciated. So little has been written and said about the deciduous teeth, and so little care and attention given them by the parents of their possessors, that it will require some time to thoroughly digest the subject matter contained in it.

Time did not permit more than a hasty consideration of Dr. Beers' paper, it having just arrived by mail at the closing of the session, but he who carefully reads it will find that he is a step nearer a solution of pyorrhœa alveolaries.

Dr. Melotte, besides his clinical talk the first day, gave a bench clinic the morning of the second. He exhibited his ingenious triple attachment bench device, comprising anvil, vice, and rubber block, against the latter of which one may hold a piece of dental work for filing or trimming more firmly than against wood, and with no danger of breaking or bending or marring the surface. He also demonstrated melting gold and explained its further treatment in successive stages to the completion of an artificial tooth crown. At the close of the clinic he congratulated the audience on the interest manifested, and close attention given him. When not feeling well, as was the case the first day, he actually dreaded coming forward, but instead of being depressed he really felt as though he had received a tonic. The operative clinics we watched with a great deal of interest, and the desire for knowledge evidenced by the many questions asked.

Dr. Sawyer inserted a beautiful gold filling in a left upper central incisor (distal surface involving the cutting edge) using Packs gold cylinders. He also, in the same mouth, removed a cuspid pulp using cocaine injected directly into the pulp simultaneously with the thrust of the hypodermic needle. The result was perfect anæsthesia, and the root was filled immediately.

Dr. Magee's clinic was a contour amalgam filling in an upper bicuspid (the best available case), illustrating the use of Perry two-bar separators, and steel matrix cut fitted for the particular case. It may be interesting to note that Dr. Sawyer and Dr. Magee were classmates at college, yet neither one knew the other was to clinic at the meeting until the programme appeared. The exhibits were a feature of the convention, in fact no meeting could be complete without them.

The S. S. White Dental Manfacturing Company's goods under the agency of Brown & Webb, of Halifax, sustained their well-known reputation, the tireless F. S. Horton and the genial hypnotist W. H. Town, coming from Boston to give Mr. King a helping hand.

The Boston Dental laboratory exhibited some beautiful specimens of work for artificial substitutes of lost dental organs.

The Dominion Dental Manufacturing Company, under the charge of its superior officer, Dr. George W. Lovejoy, had an extensive and comprehensive display.

The consolidated Dental Manufacturing Company's goods from the depot of C. R. McDowell, of Montreal, were effectively displayed by the courteous and obliging Mr. Pattison.

Mr. McDonald, of the Boston Dental Manufacturing Company, though coming late, displayed a choice lot of goods.

Paterson & Foster's display was in charge of the junior member of the firm, and it need scarcely be added that their well-earned reputation was completely sustained.

S. B. Chandler's agent, Mr. McKenna, though rather later on the ground than any of the others, lost no time in getting his extensive assortment of goods ready.

Taken together, the meeting and exhibition of goods will long be remembered by those present, and their only regret seemed to be the falling through of the excursion to Annapolis. This came through the refusal of the Government authorities to allow the small steamer to take the party. The weather was charming throughout, and everyone turned his face homeward feeling that he had gleaned a great harvest.

Reviews.

A Dictionary of Dental Science, and such words and phrases of the collateral sciences as pertain to the art and practice of dentistry. By CHAPIN A. HARRIS, M.D., D.D.S. Sixth edition. Carefully revised and enlarged by FERDINAND I. S. GORGAS, M.D., D.D.S. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street, 1898. May be ordered from any dental depot advertising in the DOMINION DENTAL JOURNAL. Price, cloth, $5.00; leather, $6.00. 662 pages.

This greatly improved work has the unique relation to our literature of never having had anything whatever in the shape of a rival. It never can be in better hands than that of Professor Gorgas, whose editorship of Harris' two works has been conscientiously and ably performed. Every dental student ought to own the dictionary. It is an absolute necessity to one who wants clear interpretation of the phrases of dental science. It does for dentistry precisely what an English dictionary does for our language. The present edition has been weeded of obsolete words, and has had many important additions made relating to the micro-organisms of the mouth, electricity, etc.

Information for Patients and Dentists. A Magazine for the Reception Room Table. $1.00 a year. Published monthly by Dr. L. P. Bethel, Kent, Ohio.

A sixteen-page paper, with original and selected tit-bits and articles, intended to make patients think about their teeth and the importance of their care. A first-rate reference for dentists who aught to talk to their patients about their teeth. And Dr. W. C. Barrett's facile pen contributes an interesting article, "Do Candies and other Saccharin Substances Injuriously Affect the Teeth;" while Dr. C. N. Johnson writes a charming short story which will make all men feel like forgiving each other their trespasses.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

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EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

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Vol. X. NOVEMBER, 1898. No. 11.

DEMI-MONDE DENTISTRY.

Dr. Norman W. Kingsley, of New York, has recently added his anathema, to the unsightly barbarian splendor "of large conspicuous gold fillings, and gold crowns, showing the degeneracy of refinement and good taste in the dentists who practice these vulgarisms, as well as in the patients who demand them." "It is bad enough," he says "when gold becomes a necessity for the preservation of the teeth from further decay, but when it is used for purposes of display and to attract attention, it is an offence against all refinement and culture. I once saw a passenger on board an Atlantic steamer, dressed like a lady, whose upper front teeth were nearly all gold. It was subsequently learned that she was of the demi-monde and used this means to attract attention. While small pieces of gold in teeth exposed to observation are unsightly enough, the introduction of entire gold crowns is an offence that only a savage would take pride in."

There is a very curious difference in public taste in this matter between our friends in the United States and the people of England and Canada. As a rule, the most eminent in our profession dissuade their patients from adopting these vulgar displays, and when they are done, they are done under protest, similar to that which an artist might offer were he forced to in painting a portrait, to give black hair to one whose head is whitened by age, or make eyes that squint, eloquently large and loving. The height of art is to conceal art. But the entire object of some in our ranks is to make their patients public advertisements, and, in doing so, they publicly announce their own lack of esthetic taste.

THE QUESTION OF PORTRAITS.

We have a measure of sympathy for the dislike some entertain about the publication of their portraits. The thing is so much overdone by self-admiring people, who want pictorial notoriety, and who go so far, some of them, as to expose their most indelicate diseases, to get their pictures in the papers. Vulgar vanity has, however, no entrance to respectable journalism, and there is no journalism more singularly cautious in this respect than medical and dental.

It is perfectly natural that we should like to look upon the courtesies of those whom we respect. It is not unnatural that we should wish to have some idea, even through the imperfect idea of a portrait, of men who talk to us with tongue or pen through our journals. The object is not to "advertise" the portrayed, but to introduce to the profession, not the public, the author, or essayist, or official. We like to meet each other face to face in conventions. It is unfair to infer that there is any self-advertising in the portraits we have published from time to time. No one has ever solicited the insertion of his portrait.

"THE PRACTITIONER AND ADVERTISER."

We have not yet recovered from the shock of losing the *Odontographic Journal*, and the personality of Dr. J. Ed. Line. Our readers will share our regret in the announcement of the Buffalo Dental Manufacturing Company, that the *Dental Practitioner and Advertiser*, after an existence of twenty-nine years, has been discontinued for purely business considerations. The chief regret will be that. the profession will lose the able and racy pen as editor, of Dr. W C. Barrett, to whom our journalism and professional literature in general owe so much.

Dominion
Dental Journal

Vol. X. TORONTO, DECEMBER, 1898. No. 12.

Proceedings of Dental Societies.

DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

The regular triennial meeting was held on the 21st of September. An elaborate announcement of numerous proposed reforms had been sent to the licentiates by the Board, not one of which was discussed owing to the rowdyism of several of the members. Of recent years an addition has been made to the ranks of a few hysterical idiots who never miss the chance of exhibiting the vestiges of barbarism in their composition. These frenzied boors have been a pest to the Association for several years, and when they talk they talk by the hour and say nothing. Their verbosity runs on like a leaky tank. At the last meeting it ended in fisticuffs and kicking of the most approved Parisian *gamin* variety. There were no eyes gouged, or ears bitten off, but the amateur cannibals took it out in terrific *sacres*, and a fraternal *melée*. One "gentleman" explained afterwards that the violence of his conduct was due to the fact that he was "drunk." He had no need to make explanations as his condition was very transparent.

The President, Dr. E. B. Ibbotson, was in the chair; but, in spite of every effort, was unable to suppress the *flux de bouche* of the gentlemen who had indulged in *whisky blanc*, and if the meeting was a disgraceful failure, the chairman was in no sense to blame, as he acted with calmness and dignity. The members showed their confidence in him and the Treasurer, Dr. Stevenson, by re-electing them both. The Secretary's report was read. The report of the Treasurer gave rise to a good deal of justifiable indignation. Since the last election there have been so many changes in this office that no one seems to be personally or officially to blame. The books have been very loosely kept, and under the vague head of "sundries" hundreds of dollars have been disposed of in a way which shows the placidity of disposition of the licentiates of Quebec. The delegations to Quebec to lobby amendments to the Act have been mysteriously expensive. The following is the Treasurer's report as submitted :

E. B. Ibbotson, *Treas., in Account with D. A. P. Q. 23rd Sept. 1895, to 31st Dec. 1897.*

Income Account.

Balance brought forward		$865 61
Received from Special Exams., Sept. 1895..........	$250 00	
Received from Special Exams., Sept. 1897..................	400 00	
		650 00
Received from Matriculation, 1895'-97		955 00
Received from Primary and Finals, 1895-'97		1,835 00
Received from Annual Dues, 1895-'97		122 00
Received from Registra'n Fees, 1895-'97		350 00
Notes Discounted (since retired)......		250 00
Sundries		75
		$5,028 36

Expenditure.

Board of Examiners—			
Dr. W. G. Beers		$ 40 00	
" J. H. Bourdon		17 50	
" E. Casgrain		240 30	
" A. H. Hyndman		177 45	
" A. H. Beers		144 50	
" J. Nolin.......	$143 00		
" " Assessor	60 00		
		203 00	
" G. W. Lovejoy..........		273 00	
" S. Globensky		228 50	
" L. J. B. Leblanc........		127 50	
" E. B. Ibbotson..	127 00		
" " " ..	15 00		
		142 00	
			$1,594 25
Dr. G. W. Lovejoy, Secy's honorarium			200 00
Matriculation Examiners—			
Rev. Abbe Verreau		120 00	
Dr. H. A. Howe		213 00	
			333 00
Dental College (rent)		60 00	
Janitor		60 25	
			120 25
Travelling and Expenses at Quebec *re* Bill—			
1896, Nov. 7th, Drs Beers, Globensky and Lovejoy..		375 00	
1896, Nov. 11th, Drs. Globensky and Lovejoy........		40 00	
1896, Dec. 19th, Drs. Globensky and Lovejoy........		20 00	
1896, Dec. 21st, Drs. Globensky, and Ibbotson......		94 00	
1896, Dec. 26th, Drs. Globensky and Ibbotson		50 00	
			579 00
Refund of Fees Matriculation Examination		260 00	
Refund of Fees Primary and Final Examination....		515 00	
			775 00
Legal Expenses, Globensky and Lamarre		375 00	
Legal Expenses, J. A. Dionne		175 00	
			550 00
Notes paid with interest.............			262 99
Stationery and Printing as per vouchers		90 15	
Stationery & Printing, Bishop Engraving Co. (Diplomas)..		56 00	
			146 15
Secret Service............			34 30
Sundries as per vouchers.............			96 50
Cash on hand 31st December, 1897....			336 92
			$5,028 36

F. A. STEVENSON, *in account with D. A. P. Q., Jan. 1898, to Aug. 15th, 1898.*

Income Account.

Amount brought forward from 1897	$334 96
1898, Jan. 5th.	
Received from Matriculation Examination	590 00
Received from Primary and Final Examinations	780 00
Annual Dues	135 00
Registration Fees	90 00
	$1,929 96

Expenditure.

From January 1st to Aug. 15th, 1898.

Stationery and Printing			$27 85
Typewriting Dental Act and Amendments			20 25
Sundry Expenses as per Vouchers			19 35
Paid Board of Examiners as follows:			
Dr. J. Nolin	$61 00		
Dr. J. Nolin, Assessor	48 00		
		109 00	
Dr. L. J. B. LeBlanc		40 00	
" A. Lemieux		40 00	
" F. A. Stevenson	40 00		
" " " Assessor	20 00		
		60 00	
" H. E. Casgrain		63 75	
" A. H. Beers		60 25	
" E. B. Ibbotson		40 00	
" G. W. Lovejoy	90 00		
" " " Assessor	25 00		
		115 00	
" S. Globensky		80 00	
			608 00
Dr. G. W. Lovejoy, Secy's honorarium			100 00
Dental College, $10 and Janitor, $5, Bishop's Janitor, $5			20 00
Matriculation Examiners—			
Dr. H. A. Howe		64 00	
Rev. Abbe Verreau		50 00	
			114 00
Bishop Engraving Co. (Diplomas)			24 00
Refund Matriculation Examination			160 00
Refund Primary and Final Examination			260 00
Cash on hand August 15th			576 51
			$1,929 96

Audited and found correct,
J. A. BAZIN, *Auditor.*
20th August, 1898.

PERSONAL.

In connection with this report the following personal is felt necessary:

In the above report my name appears on a delegation to Quebec to lobby a bill. The amount of $375 requires some explanation. As it seems impossible to fathom the details, I feel it due to myself and the profession I represented, to submit my own and only share of the expenses.

PAID BY TREASURER.

Return fare to Quebec, $5.85; Pullman car, $3.00; Pullman porter, $0.50; hotel bill (Quebec) — days $12.00; cab hire, (Quebec), $2.00; total, $23.35.

W. GEO. BEERS.

Several members demanded details and explanations, but owing to the rowdyism none could be obtained. Not one of the many resolutions prepared was put to the meeting. The following were elected the new Board: President, Dr. E. B. Ibbotson; Vice-President, Dr. J. Nolin; Secretary, Dr. E. Dubeau; Treasurer, Dr. F. A. Stevenson. Registrar—Dr. W. J. Kerr, Dr. J. G. Gardner and G. W. Hyndman.

Dr. Arthur H. Beers resigned his position as medical representative of the University on the Board.

Dr. Bazin read the following:

AUDITOR'S REPORT, 1898.

To the Dental Association of the Province of Quebec:

Believing that it is the duty of an auditor to not only prove correctness of figures and establish a true balance sheet, but that an examination of source of revenue and expenditure should be presented to an association such as this, where its members have but an extremely limited idea of details, I herewith desire to state that with but one or two exceptions, vouchers are shown for all expenditure, and I can declare the books of the treasurer as correct. But I see in the course pursued during the past few years a grave danger to the best interests of the profession of dentistry in this province.

If you will notice the treasurer's report, under the head of income, the item of primary and final examinations a total of $1,835.00. This source is called in question, as some claim there is no authority for charging a fee for primary examinations; but if it is allowed as correct, I wish to put in the opposite side the cost of these examinations, which amount to $1,594.25, with a refund of $515.00; total, $2,109.25; showing a loss direct of $274.00 in two years. If you go further in this analysis you will see that the cash in hand, September 23rd, 1895, was $865.11; but after the two years receipts and expenditure, $336.92, in hand, December 31st, 1897, showing a loss in twenty-seven months of $528.19.

In the last, or rather the present year, you will observe a slightly better showing in the total, as there is cash on hand, $576.51, in August 15th, 1898, as against the cash received from the retiring treasurer of $334.96; a slight gain of $241.55. But here again is shown a condition which must lead to bankruptcy, as follows: Received from primary and finals, $780.00; paid to the examiners, $608.00; total in hand, $172.00. These are direct expenditures. There are others, and I wish to exhibit these to the members of the association, not in any uncharitable spirit, but rather to give warning in time so that disaster may be prevented. You will notice that the item of legal expenses reaches a formidable figure, $550.00 for the twenty-seven months to December, 1897; and if we go back to December, 1894, it totals $827.00.

Now, there is another item that should have the searchlight thrown upon it; that is, the travelling expenses to Quebec which, during the twenty-seven months referred to amount to $579.00; and if you include the year previous of $347.00, it totals $927.00.

That expenses for travelling and hotel to obtain or prevent legislation must be incurred is beyond dispute, but the staggering amount of $927.00 in so small a time is fatal to our upbuilding.

I leave this report in your hands.

J. A. Bazin, L.D.S., D.D.S.

THE NEW BRUNSWICK AND NOVA SCOTIA DENTAL SOCIETIES.

(Continued from page 405.)

Q.—Do we understand you that you deem it necessary that the band shall hold to the root tightly all round?

A.—I think when we have done our very best, we will still fall short of the ideal. There has been a great deal of carelessness in the fitting of bands; and more in preparing the root. You can see that while this band fits sufficiently well to show what I mean, it would be possible to draw that in here and fit so it would be almost impossible to pull it off. With the pin combined, it presses on all sides. A great many depend more on the pin. Just a flat cap can be put on, and you might preferably allow it to go over here at this point, or better, upon the lingual and that would save some of the strain in biting. Crowns are put on with very little attachment, but it makes a stronger piece of work to band the root as I have described. A "Richmond" crown is, to my mind, the ideal porcelain crown for bridge work. I will endeavor to show you how to form corundum wheels, if I have an engine and some one to tread it; I will endeavor to show how they can be gotten into shape so that you can more readily grind the portion under the free margin and even extend the crown under the free margin of the gum. With proper scalers the remaining portions of enamel on the root can be scaled off and the root shaped about as this one is.

Q.—In the preparation of a root which is not so well preserved as that one is supposed to be, for instance, where the tooth is broken away or badly decayed below the margin of the gum, how would you prepare such a root as that for the crown you describe?

A.—There is a difficulty; I see it. I have no special way of overcoming such difficulties; but I had a case where a young man fell on the frozen ground while practising for football, and broke the two central incisors; slivered them away up on the lingual side, and they broke away up under the gum on a slant about one-quarter the length of the root. I took a round corundum wheel and ground off the ragged portions of the stumps, packed in gutta percha and then, next day, with a screw, putting on a washer under the head of the screw, and forced the gum back. By leaving it two or three days, I exposed the root sufficiently to grind and shape it.

Then, by cutting it out and getting an impression in plaster and swaging a piece of gold and reswaging, after trying it in the mouth, I made a cap and, filling the cap with solder, cemented it on to the stump. Then I constructed a crown to fit over the gold-capped stump. You have presented a very difficult case to conquer. I have conquered a good many which at first sight seemed to be impossible. You have to handle these cases when you come to them, just about as you handle surfaces in filling teeth where they are out of sight; get them in sight, as much as possible, by cutting away.

Q.—Have you any special method of making an open-face crown?

A.—I think I have. Suppose that this is a cuspid. With a thin corundum disc or, preferably, a thin diamond disc, I should straighten the sides of the tooth, and I should grind away a little of this labial bulge. Let my cuff represent a band. Take a measure and form a band by lapping and fitting it up under the free margin of the gum and letting it extend below the cutting edge quite a little. Having fitted this band perfectly under the free margin of the gum, bevel the edges and fit at the bulge here, drawing it over. With a fine saw cut this front portion out, allowing the gold to extend around freely at this point, leaving quite an amount of gold near the gum line and extending down on to the face of the cuspid more than you want when it is finished. Now, with a saw, cut out the lingual side in the same way, leaving it somewhat in that shape (illustrating). Remove it and, with a pair of pliers having one side round and the other flat, contour the gold, draw it in. Then, replacing it on the tooth, burnish it down until it fits upon the under side as well as the outside or labial portion. An impression can then be taken in moldine or plaster and a fusible metal cast made of this under side and a piece of metal swaged to fit it. You can put the metal on and wax it, and very carefully removing it, invest and solder. Tack it at one point, then replace and reburnish the gold that is to go around on the face. I have had an instrument constructed recently that will enable me to swage, directly on the tooth in the mouth, the pure gold or nearly pure, and make an open-faced cap without resorting to fusible metal dies. It is not very long since I adopted that method; but I should not confine myself to swaging in the mouth always. Sometimes I am obliged to resort to impression in plaster or moldine for making a little die and swaging a piece to go on the under side and come up over the biting edge. If that can be seen done in clinic, it would make a very good clinic and it has been among my pet methods. Here is one open-faced bicuspid:

I should like to show you the taking of impressions and pouring zinc directly into the impression after drying it. I use a perforated cup, taking the impression in plaster and sand, using asbestos paper to form a tray. We will suppose we are to make a cup that can be heated so that this plaster compound can be dried out. I sometimes take a compound impression, enlarge a little, make a zinc die and strike up an impression cup that will fit the case. After a while you will get a sufficient number of cups so you can have them on hand and find you can select a cup that will suit almost any case. If you want to make a partial gold plate, for instance, supplying posterior teeth for the lower jaw, it is of importance that you have a good cup to get an impression. An impression having been obtained in plaster and sand or powdered silex, I take asbestos paper and wrap it around the impression, sticking the ends with ordinary liquid silex. The silex will stick these together so that there is no danger of coming apart. Paint this band all over with silex, making it stiff, then filling in any holes there may be, so as to get a perfect cup into which you can pour the zinc ; this is put into the oven and thoroughly dried ; then melt the zinc, being careful not to overheat it. Dr. Pearsall, of Dublin, told me his plan was to put in a little new zinc every time he melts. Melt the zinc and be careful not to bring it to a glow ; then let it cool down and let shrinkage take place until the zinc will just run well and you will have only the slightest depression in the centre, if you pour it rightly, and you will get a perfect model upon which you can swage your plate. For full upper sets, as a rule, I make my casts in that way, of zinc, and can get good results, in preference to Babbitt metal.

Q.—Does not the powdered silex have a double effect and prevent the impression from shrinking?

A.—I think it does. In preparing plates and making rubber plates, one dentist I know of, Dr. Green, of Geneva, has a barrel of ground marble dust and always mixes it with plaster, thinking it prevents shrinking.

Q.—I should like to ask in regard to cracking porcelain, whether you have special ideas on the pins? Some think they should be bent, some split and some riveted.

A.—I think sometimes the pins can be weakened by taking the forceps and flattening a pin before bending it, or you can take them in the joint of a pair of small pliers and let the jaws come up and you can flatten the pin at this point by just squeezing them between the jaws, and in that way weaken so you can bend them down. Great care should be used in bending pins. Still, I think the danger lies in heating up and cooling down and in letting porcelains come in contact with one another.

Q.—Do you think a tooth on the bridge is stronger by having a gold band showing, or is there any way you can get gold on the back which will make it as strong without showing the tip? A tooth on the bridge, can you make it as strong against stress of mastication, without showing the gold tip, as by allowing it to come over the end of the porcelain?

A.—I don't believe you can, especially where you have to pin porcelains down. The breaking of porcelains in bridges that are set is one of the things we have to contend with, and the repairing of porcelain is something which, if I had time, I should like to talk about. I have constructed an instrument for dilating a tube. A pin on the teeth may be elongated. It is often the case pins are not long enough, and even the longest pins are frequently found to be a little short and give us a good deal of trouble. Anyone who makes bridge work for a number of years will find he is annoyed by having porcelains come off, and to replace porcelains successfully is quite an important thing. To elongate these pins, take a tube of platinum with a pure gold upon the inside. In your own laboratory you can make the platinum and gold yourself. Take a piece of platinum, we will say No. 28, and pure gold 30, and preferably in size about that wide (indicating about an inch, or a little more); put the two pieces under the blow-pipe and make perfectly clean, or you might immerse in alcohol, then lay the platinum on to the gold, having set the rollers so that 28 will just come through the rollers easily; then grasping the gold and platinum with tweezers, hold it over a Bunsen burner until it is a white heat and pass quickly through the rollers. It is simply annealing; but if conditions are right passing through the rollers, you will get perfect welding, perfect interlocking of the crystals of gold and the platinum, and you will get a piece of platinous gold in that way. Cut off a strip and you can very readily make a tube to fit the pin. Then with a blow-pipe and a tiny piece of pure gold, unite the ends. Having placed the two tubes on the pins, invest and put under the blow-pipe, after heating gradually, and the pure gold will unite on the inside with the platinum pin and you will have two elongated tube pins. You drill your holes through the bridge to accommodate these pins and then upon the under side counter-sink it and the tubes passing through may be ground off even with the general surface. I have constructed a tube dilator. It has a sole leather pad (on one side for contact with the facing), which may be made plastic by soaking it in water, or it can be covered with rubber and there is no danger if properly handled. Placing the dilating punch-like end into the tube, it can be dilated so as to fill the counter-sink portion of the gold. A small-headed gold pin may then be made and cemented in, if it is thought best; or the space may be filled in with gold foil. In that way it seems to me a bridge may be repaired easier than in most other ways. Adjourned to 2 p.m.

AFTERNOON, September, 1st, 1898.

Meeting opened at 2 p.m. Dr. Cogswell in the chair.

Clinic by Dr. J. M. Magee—Subject, "Contour Amalgam Fillings."

Clinic by Dr. A. J. Sawyer, of Manchester, N.H.--Subject, selected

Clinic by Dr. Melotte, of Ithaca, N.Y.—Subject, selected.

Adjourned to 7.30 p.m.

EVENING, September 1st, 1898.

Meeting opened at 7.30 p.m. Dr. Cogswell in the chair.

Minutes of preceding meetings read by the Secretary.

Paper read by Dr. H. C. Wetmore, of St. John, N.B.—Subject, "The Practical Value of Chemistry in Dentistry."

DISCUSSION.

On motion, the privileges of the meeting were extended to strangers, members of the profession, present.

Dr. CATES—Assuming that two of the principal points in this paper be correct, and if teeth are caused to decay by fermentation caused by an acid that would form from the secretions of the mouth, we are led to acknowledge that in one of the latest discoveries, being an anti-ferment, or having the property of killing or destroying the fungi that produce caries, we have a very valuable thing, and for myself, and those I think who have used this new anti-ferment—formaldehyde—I think we have in that substance something that will stop fermentation ; and you will find another valuable solution, called Wampole's Antiseptic Solution, in which this ingredient is found. You will find that will also stop fermenttation, and this is one of the valuable chemicals we have lately added to our list, and I think if it were more generally used than at present, our patients, especially, would be benefited by it. It has been a mooted question for a long time. We know where there has been fermentation an acid will be formed *by secretions of the mouth.* The heat of the mouth, 98 degrees, and secretions, mixed with particles of food, will cause fermentation and an acid will be formed. If we have some simple wash that may be used daily by our patients, and can stop this fermentation, it must be a valuable thing to them. I recommend Wampole's solution, which contains this anti-ferment. You may procure it also in the form of powder.

Dr. C. O. WEBSTER, of Pictou, N.S.—I would like to say that I am indebted to Dr. James Daley, of Milton, Mass., for recommending milk of magnesia to be used in cavities that are caused by acid. I have found that by treating the cavities with milk of magnesia, it will leave a slight scum that will remain sometimes for a month. By using a steel instrument on the tooth, the scum will entirely disappear ; but unless friction be applied, the cavity will remain coated for some time. It appears to arrest the caries altogether, and I think the other members of the profession will find it as beneficial as I have found it.

Dr. J. M. MAGEE—I cannot criticise Dr. Wetmore's paper, but there is one thing we find in our practice—at least, I have found it. In cases where a gold cap crown has been in the mouth some time, I have found the adjoining tooth, sometimes on one side and sometimes on each side, extensively decayed. I have always attributed it to chemical or galvanic action, though could not prove it. I knew caries was chemical action, therefore I supposed it was due to chemical action. I know they will decay very extensively and very rapidly. The only way I could cure them was to excavate and fill with amalgam. I use a cement under the amalgam. That seems to stop the chemical action between the fillings and gold crown, acting like an insulator. It requires two metals and an intervening space containing moisture, to make a galvanic battery ; but where cement was used, chemical action has ceased. The direct current between the crown and adjoining tooth had been stopped by the intervening layer of cement.

Dr. COGSWELL—I would like to ask the gentlemen if they have ever used Condy's fluid in cleaning out cavities, and what effect it has upon teeth. I imagine it removes the sense of touch. You see the action of the alkali upon the acid. It always turns white upon two or three dressings. I find it satisfactory, and there is a chemical action, one destroying the other.

Dr. SANGSTER, Sackville, N.B.—In the application of potassium permanganate to remove the acidity, etc., is it intended to be left in any length of time, or removed at once at the same sitting?

Dr. COGSWELL—I merely use it as an antiseptic to wash the cavity out, and it is excellent to aid in counteracting the effects of the acid upon the tooth. You will notice the action immediately. It goes in a crimson color and comes out perfectly white, and there is perfect proof to the patient that there is acid there. It cleanses it entirely, and my experience proves that it removes the acid. I only put a few drops in a little water. I use Condy's fluid.

Dr. ROBERTSON, St. John, N.B.—From my knowledge of drugs, if that is not used (in Condy's fluid form), sufficiently diluted it will lose its value. If used on your hands, they will turn sometimes to the color of russet leather, and I think the same effect would be produced if not used sufficiently diluted.

WILLIAM H. POTTER, D.M.D., Boston—You have very kindly thrown the meeting open to strangers. I happened to be here from Boston, not knowing about your meeting ; but I must say I have gained a great deal of pleasure and information from the little I have seen. I am interested in the paper which you have just heard, about the practical value of chemistry, because I believe it is by consideration of this sort we are going to establish our reputation and consider it as scientific men. We have heard much of the mechanical side of our work ; but if we can go into the scientific side, about what is going on in the mouth, about fermentation, bacteria and that sort of thing, that kind of work is recognized as true scientific work. I believe each one here can to a certain extent carry on considerations and observations along the same line as the more famous men in the profession. I thought to mention the use which I make of creoline. It is a useful germ destroyer, and for some years I have been using it in combination with a tooth powder, made up of chalk, soap and a little borax—I don't remember just the formula of it. I instruct patients to use that solution in the mouth every time they use a tooth powder, after the fashion of a wash, forcing it by the tongue to the roof of the mouth, and sending this fluid through the spaces into the cavities of the cheeks, and in that way removing the germs, as far as possible, from the cavities, and leaving at the same time a fluid which, if it does not destroy the germs, at least controls their growth. I think we have to look after the mechanical side first, and remove, as far as possible in a mechanical way, all results of fermentation, and then if we can leave something in the mouth which will prevent the rapid formation of germs and control that growth, which we know does very much harm, we will have accomplished a great deal.

Dr. DONHAM, Digby, N.S.—Permanganate of potassium is a drug I have used a great deal for medicinal purposes for the mouth. Taken internally, it is used to reduce flesh. It is antiseptic ; you might say, a microbe killer. It is a powerful caustic. As a mouth wash I have read of it as being recommended in some of our medical literature for cleaning the mouth ; but I think, of course, all these agencies, if they are used too strong, will do harm, but that dilute solution probably does just the proper amount of work and no more. It is sufficient so far as a medicine will act, but it requires judgment not to use it too strongly. In relation to the decay of the teeth, of course it is dependent on a great many circumstances. You will notice particularly that decay of the teeth is between the adjoining teeth ; it is not on the surface where the tongue or any friction comes, but where little particles of food lodge ; that ferments and produces an acid. This lack of cleanliness will cause disarrangement of the stomach, dyspepsia and other complaints. Cleanliness is the main thing. I am a member of the medical profession and practise a little dentistry. In my own experience where people have had asthma, shortness of breathing and all that, and medicines would not cure them, extracting the teeth would do the whole thing and no medicine at all, showing that the cause of the stomach disarrangement and short breathing in this case had depended on decayed teeth.

A paper was then read by Dr. A. C. Cogswell, of Halifax, N.S.—Subject, "Nicotiana." (Published in issue of January last.)

Dr. CATES—While there is an immense amount of fact against the use of tobacco, there are two points I think you will admit in its favor, that is, pertaining to the teeth. We find on examination that tobacco is an alkali ; it interferes with the acid and it allays pain and obtunds sensitiveness ; that we know. Yet, in view of all these facts presented to-night, who among us would dare to continue the use of tobacco ? (Laughter.)

Dr. DONHAM—I do not wish to discuss this subject at any length, but it put me in mind of a case I had. A gentleman was dropsical from heart disease, and had eaten tobacco forty solid years ; chewed the weed and swallowed the tobacco, and did not die for forty years. He was dropsical ; he lost consciousness. Another doctor was with me and said my patient would be gathered into Abraham's bosom that night ; but I brought him around and he lived a solid year. I think you can get habituated to a pretty strong dose of tobacco.

Dr. CATES—That appeal to our sense of decency is well timed. I use tobacco, I am sorry to say ; but I really do not think we should use tobacco. With our knowledge of such things we have to use to prevent the inroads of tobacco, I do not think we have any excuse for using it, whatever. It is no doubt a filthy habit and it is an expensive one. It is offensive to ladies, generally ; but that paper, as I said before, is a timely article among us, and I think I would go in with any number of gentlemen present and form an anti-tobacco society.

Dr. COGSWELL—My object was simply to bring the matter before you as a profession. I think in many cases we get careless, and it sometimes gets to be objectionable. As a profession we want to be neat and nice about our person and about our appearance in every way, and should take great pains about what we do in that respect, in order to elevate ourselves as a body. That was one reason which induced me to write this paper. I was led to it by the remarks of some ladies, who spoke of dentists who use tobacco and they did not like to go to them. It may aid us and assist us to do better. I would like to ask the gentlemen here if the use of tobacco does not have an injurious effect on the teeth. I think tobacco itself (the plant) is astringent ; but I think the effect of tobacco as a foreign substance, on the molar teeth especially, is bad. One medical doctor was convinced at the last meeting and proclaimed himself a convert.

Dr. J. M. MAGEE—I do not think anybody can do more or less than praise Dr. Cogswell for his able paper ; but there is one little mistake I notice here, I think we might correct ; at least I think it is a mistake. In the mouths of smokers, where I have noticed the roof of the mouth, those little pimples or blisters that he speaks of, I have never seen the gum "spongy." Wherever I have seen it, the gums were firm. I have never seen them covered with germs from tobacco. The effect of tobacco is to paralyze these germs, and from that very fact it is not a bad thing for caries. It will stop caries—tobacco chewers are especially free from caries; but there is the objection that it stains the dentine wherever exposed. Many in our own ranks use it. I think it is one of our duties to curb the habit in the young as much as possible, where we have a chance of doing so. Wherever I find a youngster smoking cigarettes, I try to give a warning, and if under age threaten him, because dealers are not allowed to sell to boys under sixteen years. Sometimes the effect has been good and the youngsters have abstained for a time at least. I do not think to a mature person, the smoking of an occasional cigar is injurious and, when a man is in the habit of smoking, after a heavy meal it is quite soothing to sit down to a pipe; but I do detest and abhor this spitting around everywhere. I do not see why a man should desire to see how big a mark he can make on the floor or sidewalk.

Dr. F. A. GODSOE, St. John, N.B.—I do not want in any way to criticise this paper, because I do not think anyone can possibly do so; it is a paper of which you should feel proud. It could not but be forcibly impressed upon our minds as true in almost every respect, and I for one think the effects of tobacco upon the system are not what we should desire. I am a user of the weed myself; but during the day-time, unless I am upon a holiday, I never feel disposed to use it; but I do at night, and find a great deal of recreation, especially when alone. Our friend, Dr. Cates, says he will be one to form an anti-tobacco society and give it up. He has been a habitual smoker for many years, and if it has a disastrous effect upon his constitution, it certainly might have such upon mine. For myself, Mr. President, just at present I do not feel disposed to join such a society. I tell you the plain truth when I tell you I enjoy a smoke. I do not indulge in it to such an extent that I think it has an injurious effect upon me. It may come gradually as to effecting absorption of the gums, which you speak of there. I have seen cases where teeth were, as I took them to be, preserved by the use of tobacco, as far as caries was concerned. In the same mouths where you find this parboiling, I have also found the palatine portion of the molars thickly covered with tobacco and there has been shrinking of the gums to a great extent. I always attributed it to pyorrhœa alveolaris and found on examination of these roots I could bring away a great deal of calculus. I could not for a moment consider tobacco was the real cause of raising of these gums. The spongy condition of which you speak, I have found. I have also seen the roof of the mouth in the condition of which you speak in heavy smokers. I deplore the habit of standing on street corners and filling the sidewalks with tobacco juice so that ladies cannot pass; but I do not think the members of the dental societies in New Brunswick, Nova Scotia and Prince Edward Island would be guilty of such a habit.

My object when I got on the floor was simply to ask if the time is opportune to tender a vote of thanks to our President for the able paper which he has given us to-night. I feel Dr. Cogswell has given us something on which we can ruminate—those here who are in the habit of indulging in the weed.

Upon motion of Dr. Godsoe, seconded by Dr. Robertson, a vote of thanks was extended to Dr. Cogswell for his able paper, to which Dr. Cogswell made a short reply.

Paper read by Dr. Murray, of Moncton, N.B. Subject, " Nitrous Oxide Gas."

Dr. ROBERTSON—I was taught when at college that if ammonium nitrate is heated too highly you produce nitric oxide, an acid decidedly poisonous. That I think Dr. Murray was slightly mistaken in. I think that if a person inhaled a gallon of that they would probably be a fit subject for a coffin. I have had a little experience with nitrous oxide. I once had a medical man bring a patient to me. The patient was one who, after I had administered a few gallons of gas, began to discolor. The young lady was about nineteen. The doctor took hold of the patient's wrist to feel the pulse and did that repeatedly until I got annoyed, and finally he dropped it. He said to me afterwards he had never seen nitrous oxide gas administered and I did my best to explain. A barber came into my office with a lower second molar to be extracted. I found my cylinder contained 50 gallons of gas. I administered gas to that man until my arm got tired holding the inhaler. You could just see him make an effort, but he could not raise his fingers. I told him I was going to extract the tooth and I could see his lips move a very very little. However, I dropped the inhaler and extracted the tooth. He said afterwards he was very sorry at the time he could not prevent it, but was glad afterwards that he could not. I found he had inhaled 45 gallons of gas. If a patient ceases to respire with me I have a small bottle, about an ounce, containing ether. I lift the head from the rest and pour about a tablespoonful down the back; it is just like so much ice-water, and the effect is very beneficial. To me it seems ridiculous for people speaking of dentists administering anæsthetics to people with heart disease. I would like to ask any dentist if he ever came across anyone about to have a tooth extracted who had not a weak heart. I think we, as members of the profession, and I am sure the majority of the medical profession, cannot tell just who have weak hearts. Take the accidents which happen under chloroform; they happen almost entirely in the hands of those who are professors in colleges and experienced men; that is what I glean from the journals; I have yet to hear of an accident happening in the hands of an inexperienced man. I have had some rather disagreeable experiences with chloroform. I had one patient a short time ago and a young medical man came with him to my office. We had about half an ounce of chloroform, D and F, the best you can get.

We used not more than three drachms. When I had finished my work, having taken out about twenty teeth, he collapsed and we had a very narrow squeak with that man. Respiration ceased ; there was not any more life in him than in a piece of wood. I took hold of the man by his lower limbs and stood him on his head and we resorted to artificial respiration for a long time when he finally recovered.

Dr. CATES—I think there is a gentleman present who will remember when one of the leading physicians of St. John led a patient into his office and that patient was so weak that he required assistance to gain access to the office. The physician said he would like to have gas administered and have a tooth removed. His heart was very weak, in fact he was in such a precarious condition in regard to his health that the teeth were thought necessary to be removed and as one of the last resources to help him and gas was administered. The man was so far gone that two weeks afterwards he died.

Dr. MAGEE—I made two or three memoranda while listening to that paper being read and one is just a corroboration of Dr. Robertson's remark about nitric oxide. It is very irritating when anyone breathes it, and I do not think there is a particle of doubt about the gas being either nitric oxide or nitrous oxide. In regard to making gas, as Dr. Murray spoke of now, I do not suppose it is worth while our taking time for, when we can get such good gas from the dental depots. He made a reference to the fact that patients will kick up a shindy, so to speak, and do lots of remarkable things. It is my experience that at a certain stage in the gas (it may be different lengths of time in certain cases), whatever the person starts to do he keeps on doing until the gas has made him completely unconscious : the muscles relax or stop that action only when the gas has paralyzed that part of the brain which has set them in action. They may start laughing and they may begin to cry, but whatever they begin to do they keep on doing. He also spoke of hallucinations that people have. I used to make it a habit every time I got a cylinder to test it upon my self before using it on anyone else. Now, I get one particular gas and knowing it to be uniform, have not had any occasion to try it except to allay someone's fears that it might be injurious. Then I take a little. When losing consciousness I always think I am in a shipyard. There was another point he referred to and that was the subject of breathing ; he says sometimes they stop through fatigue. To me that is not the reason ; it is just the same as when you exhale and inhale air to the full extent of the lungs for several times. I think the whole body is supplied with oxygen to the extent that the lungs do not need to act and that is the reason they stop breathing at that time. I am never afraid when they breathe fully and then stop ; the danger sign is when they breathe faintly and the breathing gets fainter and fainter. Better take away the inhaler and let them have a whiff of the air and that is about all that is necessary.

When the tongue has got back in the throat and the patient attempting to breathe and cannot, the suggestion was to use the tenaculum. We do not often have this at hand, but it is a very easy matter with the fingers to pull the tongue forward. Poke the fingers away back and hook the tongue downward and forward.

Then as to the bad effects that follow gas; when one gets an overdose of gas it is always followed by headache and sometimes nausea. Pain in the head is due to the effects of nitrous oxide. It dilates the arterioles. I have never had one of those cataleptic cases yet. I have heard of them, but never had the pleasure of meeting one and do not want to. In reference to the combination of ether and nitrous oxide, I have never had occasion to use it. We are not allowed in New Brunswick under our dental laws to use ether and chloroform. I do not think we ought to use it I do not think there is really any danger, but it is against the law. In combination with nitrous oxide, from all I have been able to gather, it is perfectly safe. First carry anæsthesia to almost perfect completeness with nitrous oxide and then keep it up with ether. I knew one man who practised that for a long time just on the same lines he had followed in the use of chloroform first and then ether.

Dr. MURRAY—In reference to the combination, Mr. President, I have used it several times, of course not for myself. I can accomplish all I wish to accomplish with nitrous oxide gas, but I have used it for physicians. I had a case not long ago where I administered the gas, and the physician the ether, and when we got the patient completely anæsthetized I continued the ether and the physician performed the operation. I must say that in the operations which have come before me all have been perfectly satisfactory, as far as the anæsthetic is concerned. It takes a very short time indeed, as we all know, to put a patient under gas, and they can be kept anæsthetized perfectly well with the administration of a very small proportion of ether. Then the operation can be performed very successfully and without any pain whatever.

Dr. MCAVENNY—After twenty-five years' experience with gas there are many points I would like to touch upon. There is one thing I would like to speak of particularly, and that is when a patient comes to your office and you fear you may have trouble. When he gets in the chair you say, "Now I just want you to do as I tell you." He says he will try. Say "No, I won't start unless you promise me faithfully you will do just as I say." He says again, "I'll try;" but don't go on, it is no use; if he once says he will do as you tell him then go on, and you will have no trouble with that patient.

Dr. W. P. BONNELL—I have a couple of points I have found valuable to me in my practice. One is perfect quietness in administering gas. You have a young lady in the chair, very nervous, and if she hears any remark by anyone she will become nervous and frightened. I never make any remark more than that the patient is doing nicely. The other is in stopping breathing, I find that can be overcome by telling the patient to exhale. They have an idea they must inhale and they cannot, but just tell them to blow as hard as they can, and they then do nicely. I must say of late I have not had any trouble in connection with this matter.

Dr. MOORE—Dr. Magee, in criticising Dr. Murray's paper on the question of stopping breathing after a number of deep inhalations, spoke of the system having taken in so much oxygen that he was not afraid at that stage of the stopping. Dr. Murray explained the action of nitrous oxide gas, not as giving an extra supply of oxygen to the body, but as keeping it away from the circulation. I would like Dr. Magee to explain just how his fear would be allayed.

Dr. MAGEE—I made a mistake in that ; it is not an oversupply of oxygen, but nitrous oxide is a supporter of life ; that is, it exhilarates. It enters the circulation and seems to fill up the body, sustaining it for awhile.

Dr. ROBERTSON—If oxygen, as we know, is the great life-giver, of course there is more oxygen in arterial blood than in venous and a patient oftentimes becomes sort of bluish-black, as you all know. I was taught, and I think the majority were, that the effect of nitrous oxide was not hyperoxiding but hypooxiding, which is, as you know, a diminution of the quantity of oxygen in the blood. I don't think, though I don't know, that nitrous oxide is a life-sustainer ; in the air nitrogen and oxygen are not in combination, as they are in nitrous oxide.

Dr. DONHAM.—The different anæsthetics result similarly, though in entirely opposite ways ; one paralyzes the respiratory organs, and diminishes the oxygen of the blood, and so creates an increase of waste tissue, and the other by increasing the amount of combustion fills the blood again with carbonic oxide, which is the venous blood. When a person is paralyzed with chloroform, or has the anæsthetic effect from gas, it is either from the diminution of oxygen required to carry on the natural functions of life, or the increase of it which causes this paralysis. From the different agencies you can equally well perform your operations, only the effect comes in a different way. The first time I administered gas was in Woonsocket, R.I., when a lady came in with eighteen teeth to be taken out. The gas bag was there, and I thought I might perform this little operation. I gave her what I thought was quite sufficient ; I did not know the exact moment when to stop, but thought she had taken enough. The operation was successful.

I took out all the teeth, and she remained unconscious long enough for me to extract half a bushel. I did not understand just what was wrong, but believe I had given an overdose. The next time I saw it administered was by Dr. Bigelow, and as the blood from the wound was black the doctor said he would not use it again. I think the same restoratives apply to all these anæsthetic drugs alike.

Dr. C. O. WEBSTER—There is one point I would like to ask about in the use of nitrous oxide. What is the tendency in persons who have a hæmorrhagic diathesis? My personal experience is they are rather apt to have more trouble after using gas than they otherwise would.

Paper by Dr. F. Woodbury, Halifax, N.S. Subject, "Education of a Dental Surgeon."

Dr. MAGEE—Having had a little experience with legislation to the end that our own society in New Brunswick should advance the standard of educational requirements for admission to our profession, I must say that the paper has touched the most vital point. I think that at the first start these men who took up dentistry did so because they were compelled to. There was a demand for their services, and the blacksmith and the butcher and other men took it up. They are the men we must thank for all the good we have accomplished, even at this late date, but I think a part of the trouble at the start was that those men feeling that as they themselves when they began practising did not have any special knowledge, thought those who were to enter the profession after them did not need to know any more, and the requirements should not be any greater for the new ones than it was for the old. When they started colleges they took in all who presented, and of course just taught them as little as was really requisite to send them out to work, taught the mechanical part and paid little attention to theory. Of course the need having been filled, and better thinking men got into the profession, or men who thought it was a higher and nobler profession than a money-making business, thought it was a good thing to advance the standard and to teach men it was not a carpentering business but something that had relation to the whole system, gradually brought in first one thing and then another until now we have a very good standard. As time goes on there is no question in my mind but that every man who practises dentistry will have a medical degree as well. I am now getting along to middle life and it is not very many years until I shall have a medical degree, I don't care how I do it. I was going to say it would be a good plan for young men to be encouraged to take a medical degree first. They will probably soon be compelled to do it for their own sakes.

Dr. COGSWELL—It is a step in the right direction; the more knowledge one has the more able he is to meet and compete with others. In the United States many do obtain both degrees.

Dr. MURRAY—I am very much pleased indeed with Dr. Woodbury's paper. It is a subject which I have often thought about and when I saw he was to read the paper I looked foward to hearing it. I think in order for us to cope with the other professions it is just as Dr. Woodbury said in his paper, that the literary qualifications of a dentist must be on a par with the literary qualifications of other professions. In the past we have had men come into the profession whose literary qualifications were very poor; the result is that it has been the means of keeping the standard down to a certain extent, therefore in order for us to have this standard raised on a par with other professions we must have educated men, men of culture in the profession, on a par with those in other professions. I think there can be a great amount of good done at the colleges as far as raising the standard of our profession is concerned. If they would proceed in the right way I think that the men whom they sent out would be better. Make their preliminary examinations high and those who go up for examination and fail let them go home again and get qualified. and then before our dental societies we will not have so much trouble about college graduates failing to get through their examinations. It is there it should be taken hold of at first. With a great many colleges all you have to do is sign your name, matriculate, and get through your dental course without any regard whatever to your literary qualifications.

W. H. TOWN, of the S. S. White Dental Mfg. Co.—A little antagonism sometimes does good. For forty-two years I have seen the profession grow up and colleges develop. The mechanical faculties are very rarely found combined with the literary, and I have observed that the men who stand high in literary position and write literary articles, those very men I have known to be in professional hells all their lives in offices, because they have not the manipulative ability to realize the ideals which they so magnificently expressed; but I would not belittle the literary education. I say the mechanical quality is largely in the ascendant to the ordinary dentist and the best men in the profession (and I know lots of them) have little literary qualification. There is Dr. Bliven, of Worcester, who never had any advantages whatever and yet his peer is perhaps not known in the world in certain lines. I know many such instances, and I also know this, that many men with no advantages at all, but confronted with necessity and with original investigation as to what to do, walk into the vast unknown—for, gentlemen, knowledge is a very superficial matter, we know exceeding little and the limits of the unknown are so very wide—that some fellow has happened to stumble into the path from necessity and discovered a gold mine which you literary fellows will write books about afterwards.

Dr. WOODBURY—I don't think it will interfere with anyone's manipulative power to have a proper knowledge of surgery. I don't think it will hurt the dentists of New Brunswick, Nova Scotia, and Prince Edward Island, to have the power to administer ether and chloroform, or the dentists of Canada, when they come across a little tumor, to be able to remove it without calling in some one that does not know half as much about it. I don't think it will hurt a surgeon to have enough common school education to be able to listen to a lecture on operative dentistry and be able with reasonable intelligence to interpret it when he does listen. I don't think it will hurt a dental student to be able to have general education enough and mental training enough in good square consecutive thinking to make him able to sit down and read some original communications in some of the papers. It occurs to me that our profession is suffering for the privileges that we ought to have. We ought as dental surgeons, I claim, to be able to have the right to operate on the maxillary bone and have the right without question to administer constitutional remedies for the cure of constitutional distubances having expression in the mouth. It is very questionable, in my mind, if I administered a constitutional remedy to bring about some constitutional effect—it is very questionable if anything should happen or a family physician found it out—whether I should have any protection in the courts. I doubt it very much, and even in the adminstration of gas I doubt very much whether the dental profession would receive protection from the medical brothers or consideration from the courts. We are in such a position we do not know where we are, and I do not see any way out of it but that dentists have a medical degree. We cannot have consideration in the eyes of the medical profession when we demand notice unless we do stand with them in the medical degree and unless we stand on another level, as I stated in my paper. I do not want to see my boy, if he goes into the dentistry and has no taste for literary pursuits—I do not want to see him spend five or six years in an arts course and pursue something he does not intend to carry out, but I do want him to have enough education to be able to grasp the subjects he comes in contect with and be able to talk about them and think about subjects intelligently and pursue the technical education he intends to pursue. Neither do I see that having that education it will interfere with his mechanical skill in any way.

Paper by Dr. J. S. Bagnall, of Charlottetown, P.E.I.—Subject, "The Deciduous Teeth."

Dr. MAGEE—This matter, I might say, is one of almost vital importance to me, because as I make somewhat a specialty of remedying irregularities I feel it is necessary in every case where there is a correction to be made, to get it done as early as possible, and if it can be done with the deciduous tooth in place, so much the better. I almost invariably find if the deciduous teeth are prematurely extracted there will not be sufficient room for the permanent ones to come through ; sometimes there will be plenty of room, but oftener there will not. Dr. Bagnall has made a quite extensive study of the thing. The first cases he cites are of one class ; the last, of another. The first is where there is an inflammation from roots that have been left and the permanent teeth could not with comfort get through alone, and the other class is where deciduous teeth have been kept in the mouth much longer than their natural term of life. He says, "I always maintained they would come through," and in my own opinion he is perfectly right. They will come sooner or later, but because the deciduous teeth were extracted so early and the permanent teeth were so far down, the bone had become solid and it took nature a long time to push up that shell. We know a blade of grass will push up asphalt; it is bound to grow, and an erupting tooth will also grow with any kind of a chance and will work up to its proper position sooner or later. In another case further down, he says, "If all means at my disposal fail to relieve the troubles, etc., to administer ether, if necessary, and remove the offending tooth or teeth." He is perfectly right in that. I don't think that is a question anyone should consider. If a patient cannot endure life, it is better to remove the cause of the trouble, even at the expense of an irregularity and perhaps the loss of a permanent tooth when it came through ; but I have in dozens of cases seen where there has been an extraction of a deciduous first molar before the time it would naturally be lost, the coming forward of the second molar almost invariably closes the space. I have not noticed the difference if there happened to be a front tooth lost. I have known deciduous cuspids to be taken out to allow space for a lateral to come up ; but of an incisor in so young a subject, I do not just now remember a case. If a second deciduous molar is removed before the age of five or six years, the first permanent molar invariably comes forward. I have never seen a case where it has failed to do that ; it always comes forward and closes the space somewhat. Then there is not room for the second bicuspid to come in the proper place, and as a consequence there is the crowding of the anterior permanent teeth. We often find a tooth crowded forward until, perhaps, a lateral is pushed out of its proper place. There is always that forward movement ; but I don't think any question should be raised on the extraction of teeth where a child cannot get relief in any other way. As to the absorption of the deciduous teeth : Wherever a permanent tooth comes in contact with a live deciduous tooth, there is bound to be absorption, if it comes in a proper place between the roots. A deciduous molar molar will have a bicuspid in among its roots, and very gradually absorption takes place until eventually we will find nothing but the top of the deciduous tooth left. This will have a little red spot in it that nature has placed there to absorb the tooth. I think the reason that that bicuspid shown in the model has come backward into the place where the molar was taken out of is, that the molar was abscessed, and the erupting tooth moved into the crypt thus formed. The molar was probably taken out at the age of seven or eight years, or perhaps a little earlier. That brings up the question he makes at this point: "This leads me to inquire are there not times when it is judicious and even necessary to extract the deciduous teeth in order that the eruption of the permanent ones may not be retarded or diverted by non-absorption of the roots of the former?" It is just a question which everyone will have to decide for himself, when there is a tooth developing in the jaw. By the use of the X-rays, it is possible now to locate a tooth, and then by its use we would not have any doubt about extraction. If we were sure there was a tooth there, and its eruption was interfered with by the presence of a deciduous tooth, we should extract the deciduous tooth. I have known of some cases where deciduous teeth have been extracted and bicuspids coming down have filled all the space between the molar and lateral incisor. There is another cast showing two cuspids, with two incisors and two deciduous cuspids between them. It looks to me as though there had been a crowding of these lateral incisors out of proper line and extraction had been resorted to. Some adult members of my own family have deciduous teeth in place. A deciduous cuspid, lateral incisor and molar were present in one mouth. I extracted the molar with the hope a bicuspid was beneath it; but, unfortunately, there was not. In another case I can see no evidence of a tooth coming through. Many of these cases. I think, are hereditary; or it may be something has happened to the germs of the permanent teeth; perhaps they are mummified. The last class of cases referred to is that where deciduous teeth remain in the mouth. I think we all have to use our judgment in cases of that kind.

Q.—How is the lower jaw in that case?

Dr. BAGNALL—I don't think the laterals were ever there.

Q.—Are the lower incisors behind the upper?

A.—They were regular.

On this question of deciduous teeth, I don't think there is much information to be gleaned from our text books, or any published articles. I take pains when away at different times to bring up questions before a man whom I think has some special knowledge, or is a shining light in that particular line of work, and had occasion at one time to speak to a dentist in Boston about this matter. He said, invariably when finding a cavity between two deciduous teeth he takes his engine, with a corundum point and water to keep it cool, and trims the deciduous teeth down to make them the shape of a dog's tooth; trims down until it comes close to the gum, leaving the tooth so that there is nothing but the tiniest point at the gum. He claims there is no room for the food to lodge, it keeps the jaw as it ought to be and saves untold misery in the end. It is almost an invariable rule with me to fill these deciduous cavities with gutta percha. The force of mastication will cause the gutta percha to spread, and if there is any tendency to contraction there will be a little more room given by the space obtained in that way. My Boston friend says he does not believe in that at all. Sometimes we see a molar so far carius that something must be done to relieve suffering. I have not had one case yet where I could apply the new remedy, Formagen, to a deciduous tooth, but hope to use it soon. I have never hesitated, on occasion, to destroy the pulp of the tooth ; but find the greatest difficulty in getting that tooth to remain as nice as a permanent tooth, for the reason I cannot fill the roots as successfully as the permanent teeth. I always encourage the parents to keep the roots there if they are not objectionable. If the root can be kept until the permanent tooth has grown sufficiently far to prevent the forward movement of the first molar, I do not think it would hurt at all to remove them, and should say if the child has reached the age of perhaps eight years and is pretty well developed, that would be a fair guide. Perhaps you would know by the eruption of the anterior teeth how the posterior are apt to come. One could tell if it was advisable to extract even earlier than that age. The extraction of these teeth I do not think will be followed by any ill effects or contraction. The extraction of the deciduous cuspid is more frequently resorted to for the correction of an irregularity in the lateral incisor than any other teeth, or it has been, so far as my experience goes ; but it is the very worst tooth we could extract for that purpose, because the permanent tooth comes in later than the bicuspids, and the space almost invariably contracts.

Then we have the condition shown by the cast where both deciduous and permanent cuspids are in place. I believe the lateral incisors were taken out and the cuspids have taken their place. I save the teeth as long as I can, to allow for the proper eruption of the permanent teeth ; but never hesitate to give relief if it is necessary.

I was called on some little time ago to extract a tooth for a little patient about ten months old. The physician said the teeth were aching and abscessed, the gums were all swollen and it was a bad case. The lips were pulled back, the gums were full and swollen and bled freely, and I only had to look at the case to recognize a case of scurvy. The teeth were discolored a little, with a brownish deposit on them, and they wanted me to extract. I recommended something else and, of course, would not extract the teeth ; but had they been extracted, I think there would have been contraction in one so young as that. I may be mistaken about that ; but I know that, posterior to the cuspids, contraction does take place.

Dr. BAGNALL—There is just one point I should like to explain. In the matter of the child's teeth where my friends thought they would not come through, the trouble began when the child was about three years of age, and they would not erupt until the child was ten or eleven. It was not at the time they ought to be there but away years before. The teeth erupted at the regular time. I have an idea that where you extract the teeth early the permanent teeth come in more quickly, I think earlier, than if their predecessors are lost in the natural way. If a deciduous tooth is extracted the permanent tooth comes earlier than if not extracted.

Dr. MAGEE—If an abscess affects this deciduous molar, the permanent tooth will come up earlier because there is a gap there, but it depends on the time at which it is extracted of course. If about the age of nine or ten, and the permanent teeth would not naturally come through until eleven or twelve, it will come a little earlier in that case.

Dr. COGSWELL—Q. Do you consider the first teeth remaining an advantage in the growth of the permanent teeth?

Dr. MAGEE—A. I think any natural action is better than anything we can hasten by other means.

Dr. COGSWELL—Q. Would you think the removal of all the first teeth would have an effect on the growth of the second?

Dr. MAGEE—A. It does help the arch of the permanent teeth to keep the others in. I do not think it affects the *development* of the second at all.

Dr. COGSWELL—I have a case in point where a physician removed all the temporary teeth, and it was supposed the others would not come through properly, but they are perfect. The child must have been five years of age. The teeth came through at the regular time and in perfect condition.

Dr. BAGNALL—That is my theory, yet I think nature removes the bone of the deciduous teeth and uses it to the benefit of the second. That would be the idea, and it is a loss to lose the teeth. The difficulty about this matter of having to extract generally comes when a child is from two to four or five years of age. Later when a child gets to be seven or eight, more or less absorption has taken place and the disturbance is not so great. The child has a greater advantage where the root is partly absorbed.

Dr. MAGEE—We should educate the parents to the necessity of having these children looked after. We know, unfortunately, they frequently do not seek our services until the children have toothache, and then we have to do something radical. I do not like to extract a molar if I can keep it there.

Dr. CATES—When a deciduous tooth is working according to nature, absorption going on and disintegration of the bone cells taking place, what becomes of this material? Is it reabsorbed and rearranged in bone cells again for the building up of the tissue of perhaps the growth of the incoming teeth? Could anyone inform me on this subject? If we have a loss of these deciduous teeth by premature extraction, must there not be necessarily a hindrance in growth for want of that substance?

Dr. COGSWELL—That is why I asked the question whether it is necessary to have the deciduous teeth in for the proper growth of the permanent teeth.

Dr. MAGEE—I do not think it makes any difference. If a deciduous tooth has been absorbed in a normal condition we will find a little red spot in the middle of it. It is my opinion that nature has that little thing there to absorb the tooth. If the tooth is dead that thing will not be there, but it is always present in a live tooth. The dissolved structure is carried all through the system as anything else would be. It is not necessary that that little red spot should eat away the structure of that deciduous tooth and carry it downstairs to the new one growing there. It eats up and pays into the system.

Dr. C. O. WEBSTER—Referring to the question as to whether the absorption of a deciduous tooth is necessary to the development of the permanent teeth, I don't think it is, for the reason that there is quite a thick tissue between the teeth; the teeth are not directly connected. There is a tissue there, and as our St. John brother says, I don't know how the material is got downstairs, but there are two sets of cells, one torn down and the other building up. I don't know where the material goes to, but don't think it can have any effect on the permanent teeth directly.

Upon motion of Dr. F. A. Godsoe, seconded by Dr. Sangster, a vote of thanks was extended to all those members who had given papers during the evening.

Upon motion of Dr. Thomson, Mr. W. H. Town was requested to address the meeting.

ADDRESS BY MR. W. H. TOWN, OF THE S. S. WHITE DENTAL MANUFACTURING COMPANY.

I would not if I could, and could not if I would, read a paper to you at this late hour of the night. The principal reason is because there was a misunderstanding about the programme forwarded to the S. S. White Company. This subject of myself and the company was left entirely out and I did not prepare a paper. However, I will give you a brief resume of what I might have written; it will not detain you long. I commenced my career in this house in '56, under the name of Jones & White. I have had the honor of serving under the four different names of this company. I thank you, gentlemen, with your high professional standard, for the recognition involved in this invitation.

Personally, I never knew a man so white, so lovely all the way through, so organized, so humanitarian and all-embracing in his mind to whom it could have been said as Shakespeare said of

Hamlet's father, "A combination and a form indeed, where every act would seem to set his seal to give the world assurance of a man." He was a spherical man, an all-round man who in his public capacity as well as in his private capacity, in his all-embracing aims in business and in his humanitarian improvements, in patriotic relation in the great civil war, for I want you to understand that Samuel S. White organized and sent to battle a company for his country; he had sixty men go from his factory with the assurance that their salaries in full should be paid during their terms of service: he also contributed $300 to every college in the United States when not a rich man, for the development of literature and science, and, personally, I am glad to pay a tribute to him, who, though dead, yet speaketh; who, though dead, yet liveth in the S. S. White Dental Manufacturing Company, a company of Quakers, of religious men, of scientific men, scholarly, honored, listening to the spirit of the times and advancing with it; and I know, gentlemen, of hundreds of thousands of dollars to-day in plants, magnificent plants, on Staten Island, simply because the S. S. White Company have tried to keep abreast of the times and have contributed in no small degree, to my certain knowledge, in the last forty years in the great development of the colleges of this country and the scientific development of it. We are are all the time solicited by surgeons to make instruments of the finest character. As an instance, we were approached to make manicure forceps by men of Germany and France. We said, "We cannot, it is a side issue; but if you will give us an order for five thousand we can do it as a side issue," and to-day the S. S. White manicure forceps is known to the world as a result of that side issue. It is a fact that S. S. White fought in the interests of humanitarianism. I had the honor of delivering the first set of teeth ever manufactured on rubber. I have known men as poor fellows who had no literary ability, contribute something for which you, gentlemen, could take off your hats and reverence them. In fact, most things that have come to the world have come from just such sources. Christ himself took twelve unlearned men when He wanted to teach the world. In the battle with the Dental Rubber Company, S. S. White had extensive interests. I knew this man; I was approached to form the union back in '64. S. S. White said to me, "You go into that matter, find out all about it, my interests are with the dental profession and I will defend it as much as in me lies." The result was we formed the Dental Protective Union.

I wish to show you the wonderful humanitarianism of S. S. White—a lovely character, a beautiful man, whose eye read you as though you were transparent, and could sympathize with you in your weakness. There are lots of men on our list who have been forty years or more in the business, and do you suppose they will any of them suffer? Why, one of our bookkeepers, not working for ten years, used to come and draw his salary every week until he died. We have a man whom perhaps you know, Mr. Freeman, who was disabled for three and a half years and his salary paid right along, and although in great weakness he is an honored member of our house. While, as an individual, S. S. White has ceased to exist, and perhaps there is not so much personality, because a corporation cannot necessarily have that, yet the spirit of admiration is in the S. S. White Company; and if you, gentlemen, could know the instructions that we as their representatives have in relation to their business, that nothing is ever to be exacted, nothing misrepresented in the slightest degree, that satisfaction must be given; we are more anxious to satisfy than you are if it could be traced to our door. Six hundred men on Staten Island. It is said all over the world there is no such magnificent place as that, holding their own houses and beautiful homes, salaries from $700 to $2,000. Many widows and children in Philadelphia are being kept in work there. Personally I have many beautiful recollections of S. S. White—the S. S. White Dental Company—it is trying to purify refined gold for me to tell you anything about them. You yourselves know we have done and tried to do a great deal for you, gentlemen, and this is only a small relation. It is all over the world in this relation, helpful, and we spend money freely in experiments. What do you think we will ever get out of the electrical experiment? We have spent thousands of dollars already for an engine that gives you power for surgical appliances all the way through. We simply do it to keep up the reputation of the house as established by that magnificent humanitarian agency, S. S. White, and we are proud to acknowledge ourselves his servants and partake of his spirit as far as possible.

Adjourned to meet at 9 a.m., Friday, September 2nd, 1898.

A paper by Dr. W. G. Beers, of Montreal, was given to the meeting in the absence of Dr. Beers. Subject, "Personal Experience in the Treatment of Pyorrhœa Aveloaris."

FRIDAY, September 2nd, 1898.

Meeting opened at 9 a.m. Dr. Cogswell in the chair.

Clinic by Dr. Melotte. Subject, "Practical Office Points."

On motion of Dr. G. K. Thomson, seconded by Dr. J. M. Magee, a resolution was passed that a vote of thanks be extended to those who have so kindly read papers and performed clinics at this Convention, particularly Dr. Melotte, of Ithaca, N.Y., and Dr. Sawyer, of Manchester, N.H., who have come such a distance and taken much time from their practice to do us good.

On motion of Dr. G. K. Thomson, seconded by Dr. Woodbury, a resolution was passed that a vote of thanks be extended to the S. S. White Dental Manufacturing Company for their assistance, both financially and otherwise, in obtaining material for the programme of this meeting, also to the Dominion Dental Company of Montreal, the Boston Dental Manufacturing Company, Messrs. Patterson & Foster and Mr. C. R. McDowell.

Meeting adjourned.

"AT HOME" ROYAL COLLEGE OF DENTAL SURGEONS.

Fun went laughing by the handsome building of the Dental College, on Friday evening, Dec. 9th, and the students drew him in and would not let him go until the wee hours of the morning. It was the third annual "at home," and the tall building was filled with ruby lights, the variegated colors of a Turkish tapestry and hearts as "light as wind-tossed feathers." Such a scene finds its adequate expression in music, and it was in this way that the glorious evening began. Of course, there were no heavy-footed strains, but the music of love songs and madrigals, all warmth and heart. Who these singers were this programme tells:

"Creole Love Song" (Smith), Miss DeGeer; "Beautiful Moonlight" (Glover), Misses Kerr and Chattoe; "Two of Them" (J. M. Barrie), Miss E. Tyner, A.T.C.M.; "Forging the Anchor" (Paul Rodney), Mr. E. Percy Brownell; "Madrigal" (Victor Harris), Miss De Geer; "Tommy" (J. B. Smiley), Miss E. Tyner; "The Bandolero" (Leslie), Mr. E. Percy Brownell; Miss Maude McMacken, accompanist.

The programme also included a short address by Chairman C. A. Kennedy, crisp and to the point.

The dancing began a little after 10 o'clock. Beautiful women, in pink and gold, and as dainty as china, filled the picture, and swaying to the music of some entrancing waltz demonstrated the the power of human beauty to the coldest. To be a patroness of such an event is equal to the honor of a fortune and a title, and this satisfaction was last night shared by Mesdames Hardy, Mulock, Ross, W. Willmott, Loudon, Stuart, Primrose, Mackenzie, Clark and Capon. The outside representatives were Mr. Henry, of Montreal, and Mr. Goode, of Buffalo.

Dominion Dental Journal

EDITOR:
W. GEORGE BEERS, L.D.S., D.D.S. = = = = MONTREAL, Que.
699 SHERBROOKE ST., COR. PARK AVE.
To whom all Editorial Matter, Exchanges, Books for Reviews, etc., must be addressed.

ASSOCIATE EDITORS:
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EDITOR OF ORAL SURGERY DEPARTMENT:
G. Lenox Curtis, M.D.,
7 WEST 58TH STREET, NEW YORK CITY.

All Communications relating to the Business Department of the Journal must be addressed to DOMINION DENTAL JOURNAL, 71 Grosvenor Street, Toronto, Canada.

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CATAPHORESIS—A WARNING.

The experience of a thousand wise predecessors will not divert folly. We must all get experience for ourselves, and no doubt it is a providential dispensation. But there is no excuse for that presumption which dogmatically arrogates an almost divine right of judgment; which, in the infancy of a new idea, or a novel experience, insists that it has encompassed within its opinion, every possibility of fact or failure.

The cataphoresis fad is not altogether new. It is not one of those fads which are without any merits. It has been successfully applied in clinics—though the value and permanency of results are not fully seen in clinics. It is a fad which requires some special predilection and experience in a direction wherein few dentists technically excel. It is not a thing to be despised or condemned because of its failures, but rather a thing where failures should inspire to conquest. Some of its advocates have been, perhaps, too assertive in their declarations that they have seen no harm in it; that they have done no harm with it. It is generally impossible to know at once whether or not mischief has been done. But recently facts are coming forth to prove that toxic effects of cocaine upon the pulp have extended beyond that tissue to a dangerous condition.

Dr. M. W. Foster, of Baltimore, reported a case in the *Cosmos*, where a pellet of cotton, saturated with a 30 per cent. solution of cocaine hydrochlorate was placed in the cavity of a tooth, and the usual cataphoric current applied. The dose was repeated. About ten minutes from the last application the patient complained that the fingers of the left hand felt as if they were asleep. The symptoms became so alarming that brandy was hypodermically injected and friction applied; the patient "commenced a peculiar howling sound." The condition lasted from 3.30 p.m. until 8.15 p.m. The rigidity of the body was very marked. The power of speech was not regained until 8.15 p.m. after digitalis had been administered. The throat was very dry for a night and a day ; the eyes painful, and for some time the vision was dimmed. This case is, perhaps, more pronounced than any most of us have witnessed ; but, within the limited opportunities for observation, a sufficient number of cases have been known to justify extra precaution, especially on the part of those enterprising bluffers who think the possession of electrical apparatus and the merest smatter of knowledge, sufficient stock-in-trade to entitle them to rush in where experts are cautious about treading.

"A SET OF FALSE TEETH FOR $3.00."

We condole with our friends in New Hampshire. The following choice bit of quack advertising may be suggestive, as an object lesson in degeneracy in that direction to which we are fast tending in Canada, and which will end in placing the prosthetic art out of the office into the "shop," on the level of cobbling. The New Hampshire genius is one of those hypocrites who assume honesty the better to deceive. Yet he is evidently one of those uncultured boors who do not know enough to tell a lie, much less the truth, correctly. Of course liars need not be grammarians ; but, as a rule, our professional liars put out their productions in a little more classic phraseology. The gutter-digger of New Hampshire starts out by announcing that he has "made a study of up-to-date dentistry *for a few months*." It is surprising he condescended to give so much time to so trifling a necessity.

"For a few months past I have been making a study of *up-to-date* dentistry. In the line of false teeth, I find that teeth come up to the requirements for that kind of work, notwithstanding the fact that twelve sets of teeth can be bought for $10.00, or about 83cts. a set. Vulcanite is another product of up-to-date dentistry. A pound of the rubber costs $1.75, makes about thirty sets of teeth at 6cts. each. Add a few cents worth of plaster of paris, wax, and kerosene oil to the above figures and the cost of up-to-date teeth is about $1.00. I have just received the above teeth and rubber which I shall be very glad to make up at $3.00 a set. You don't want to pay $10 or $15 when you can get them for $3.00.

"P.S. I am making up prices on another line of up-to-date Dentistry, which I will give you later.

"P.P.S. Am afraid I have got prices of up-to-date teeth too high. Look for lower prices later.

"Dr. C. S. R."

DR. GEORGE H. WEAGANT.

In our September issue the report of the Eastern Ontario Dental Association contained an item of a presentation to our friend Dr. Geo. H. Weagant. Unfortunately it was included in the report under Dr. Weagant's own signature, and appears as if it had been sent by him to the JOURNAL. Anybody who knows the doctor will know better, but he has written us in great wrath, as he is not the sort of fellow to tout his own trumpet. The fact is, that the item was sent to us by Mr. S. A. Craige, who was visiting the doctor at the time. Mr. Craige took the clipping from a Brockville paper, and noticing that Dr. Weagant cut that part out of his report he determined to send it. Dr. Weagant had not the slightest idea that it would go in *his* report. Everybody will be sorry to hear that he is in Colorado for the benefit of his health. Everybody will be glad to welcome him home again.

QUEBEC MATTERS.

The politics of dentistry in Quebec seem to be about as rotten as they can possibly become. The *ancient régime*, officially and personally, was entirely one of gentlemen ; the present make-up of the profession has had intruded into it the instincts of the *canaille*. No one who does not personally merit it need take offence at this statement. Those who deserve it can hug it to their bosoms. They have shown the truth of the old adage, that "silk purses cannot be made out of sows' ears." We are charitable enough not to publish their names.

Formerly no one sought, much less schemed and plotted for office. To-day there is an unseemly chase for it, and the Sancho Panzas who think themselves "fit for government," include the most utterly unfit, and the most offensively presumptious. Accusations of boodling have been freely circulated ; an erratic system of doing business has been tolerated, which has created distrust.

In brief, there has been, to say the least, a very marked degree of business incapacity and financial extravagance. The position of the profession, and everything connected with its official existence, demand investigation. It will not do to throw upon the present Board the responsibility of reorganization, or the blame for the state of affairs. The present Board have the confidence of the licentiates, and it is the duty of the members to strengthen their hands. They have inherited a condition of affairs of some perplexity, and need to take the members into their confidence.

The custom of doing important business during the three years term of office without the knowledge of the licentiates should be curtailed. It is imperatively necessary that the annual meetings should be revived. In the personal and official interest of the members of the Board, whom we know to be animated by honest motives, it is wise to render an account of their stewardship, and to take council with those who appointed them at least once a year. The *canaille* will discover that their hysterics will have no avail.

EDITORIAL NOTE.

IF any dentist, in the enthusiasm of youth or the zeal of honest and unselfish intention, thinks he has a mission to do good to his profession, and is anxious to get into harness, he may make up his mind that if he succeeds, he will in the long run, get more kicks than kindness. Some people deserve to be kicked. They are intensely for self and the dollar, and if they are not actually hypocritical thieves, they run so close to the business of stealing that they only owe their escape to their talent for concealment. But the most of hard workers in official capacities in our ranks are incorruptible and above reproach. In fact they are as they should be, more scrupulous of funds which do not belong to them, than of that which is their own. We find rascality suspected and proved in every sphere of life. Dentists are not demigods; but, as a rule, they are very respectable citizens who rarely, if ever, get into the penitentiary. They are not solicitous of public office, because they have not the time. Yet there are some who give a great deal of time and thought to the public service and receive public gratitude. The odd thing is that when they serve the profession in the same way they provoke professional jealousy. Somebody must serve the profession. There are ambitious cranks, and very respectable, but wholly unqualified men, who hunger to serve in any and every official capacity. But happy after all is the man who minds his own business.

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